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ABSTRACT

A study examined the competencies needed for articulation among and between postsecondary vocational food technology programs in Texas. A two-round Delphi survey was used to collect data from the instructors and coordinators of food service programs in Texas postsecondary institutions during the 1984-85 school year. Thirty-five of the 71 persons (52 percent) asked to participate in the first round completed questionnaires; all of these 35 individuals completed round 2 questionnaires. A consensus of 70 percent or more was reached on 208 of the 223 items on the Delphi questionnaire. Subcompetencies not reaching consensus were not contingent on the educational level, type of degree held, major area of study while in school, years of teaching experience, or years of food service experience. Eight of the 18 subcompetencies on which no consensus was reached were related to teaching in the are of restaurant management. (Appendices include a select bibliography, 20 tables, the questionnaires used in each round of the survey, survey-related correspondence, and means and percentages for competencies and subcompetencies.) (MN)

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COMPETENCIES NEEDED FOR ARTICULATION AMONG AND BETWEEN POST-SECONDARY VOCATIONAL FOOD TECHNOLOGY PROGRAMS IN TEXAS

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PROJECT DIRECTOR

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Sponsored Cooperatively by

Research Coordinating Unit
Department of Occupational Education and Technology
Texas Education Agency

and

Home Economics Curriculum Center
College of Home Economics
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The project reported herein was performed through a contract with the Texas Education Agency under the Provisions of the Vocational Education Amendments of 1976 (Public Law 94-482). Contractees undertaking such projects are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Texas Education Agency position or policy.

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CHAPTER I

INTRODUCTION

The efficient use of resources for education is a concern for both policy makers and the public. In 1984, Texans were again asked to reevaluate the state's financial commitment to public education. As always, the questions included: How much money do we spend on education, and where do we spend that money? In addition to searching for new funds, efficient use of those funds already allocated became a primary concern.

Another resource, which has a direct effect on the cost of education, is time. Time refers to hours spent in teaching and learning. Efficient use of time would particularly involve efforts to reduce duplication of curriculum over varying levels of coursework and between different subjects. Eliminating this duplication might allow post-secondary institutions to offer additional courses for the same amount of money. Offering more courses while using the same resources would better serve both students and community and would make more efficient use of educators' and students' time and the taxpayers' dollars.

An obvious solution to the need for more effective use of resources is for educational institutions to join together to develop properly sequenced, nonrepetitive coursework that would allow students to progress at their own speed. This type of

cooperation among institutions has been explored by other researchers under the title of "articulation."

In most studies the justification for researching articulation is the same. Researchers are interested in finding ways to avoid waste--that is, waste of students' and teachers' time and waste of financial resources. The emphasis of much of the articulation research has been on the effect of college and university admission requirements on secondary school curricula (Whitlock, 1978; Carnegie Commission, 1973; Menacker, 1975; Maeroff, 1983). Other studies have focused on transfer of credits, including transfers from junior to senior colleges and universities, and transfers between junior colleges or between colleges and universities (Knoell and Medsker, 1965; Kintzer, 1975). These studies provide valuable general information and outline several articulation models or systems currently or recently in use across the United States.

Studies reveal that cooperation among secondary and post-secondary schools and colleges is the key to successful articulation (Carnegie Commission, 1973; Menacker, 1975; Kintzer, 1975; Whitlock, 1978; Maeroff, 1983). Maeroff (1983) states that successful collaboration requires:

1. A common agenda
2. A true spirit of collaboration
3. Identification of a single project
4. Adequate rewards for those involved

5. A focus on activities, not machinery

One method of meeting the challenge of accountability is competency-based education. In the last decade educational institutions have given a great deal of attention to the concept of competency-based education. While there does not appear to be a commonly agreed upon definition for competency-based programs, the instructional designs for most programs have five common elements including selection of outcome objectives, diagnosis and pretesting, implementation of the instructional program, evaluation and post-testing, and certification of competence (Goldhammer and Weitzel, 1981). It is the statement of clear and specific objectives at the beginning of the instructional process that accounts for many of the advantages associated with competency-based education.

According to McAshan (1979), competency-based education has been designed to overcome many of the problems associated with experience-based programs prior to the behavioral objective era. McAshan (1979) lists fourteen needs upon which competency based programs were based. Among the needs listed are the following:

1. To avoid duplication of content within a program. The pre-statement of competencies and objectives enables departmental personnel to avoid most content duplication.
2. To establish and maintain consistency of competencies

taught within courses, regardless of the instructor teaching the course.

3. To improve individualization of instruction.

Given the advantages of competency-based programs, it seems appropriate to use competencies as a basis for comparing course content for the purpose of articulation. Therefore, it is necessary to devote efforts to reviewing analyzing and assessing competencies needed by students entering foodservice occupations.

Statement of the Problem

Foodservice programs are offered in the state of Texas at both the secondary and post-secondary levels. Because post-secondary programs are spread throughout Texas, communication among programs at different schools is difficult. In addition, though located in the same city or area, many secondary and post-secondary vocational faculty do not communicate regularly. This apparent lack of communication among faculty of similar programs represents a major obstacle to any articulation effort.

The current literature suggests that the focus of articulation should be on a very specific subject area. That is, one must define the subject area and determine the basis for comparing course content. A primary objective of education beyond the secondary level is to prepare individuals for gainful employment. Therefore the study was limited to an examination of

vocational programs. In an effort to produce specifically useful information, the study was further limited to post-secondary foodservice programs.

Efforts for better coordination among instructors of foodservice programs in Texas are motivated by the desire for the most efficient use of educational resources. Yet, before articulation can be facilitated, a clear picture of competencies common among the foodservice programs is required. The study was, therefore, concerned with establishing consensus among post-secondary foodservice educators regarding the relative importance of competencies needed by students of culinary arts, dietetic technology, foodservice supervision, restaurant management, and nursing home foodservice.

Although the American Dietetic Association has compiled acceptable role delineations for certain entry-level foodservice personnel, there has been no systematic investigation of competencies common among all of the various foodservice programs (Baird and Sylvester, 1983). Therefore, the principal purpose of the study was to obtain a consensus of opinions regarding the commonalities and importance of competencies identified for each foodservice area. This information can then be used by future researchers, educators, and program administrators to facilitate articulation among post-secondary programs and between secondary and post-secondary foodservice programs.

Hypotheses

The following research hypotheses were tested using a variety of statistical techniques including frequencies, percentages, Chi-Square, Kruskal-Wallis, and Spearman Rank Order Correlation.

Hypotheses I: There will be general agreement among instructors in post-secondary culinary arts, dietetic technology, foodservice supervision, nursing home foodservice, and restaurant management programs on which foodservice competencies are considered essential.

Hypotheses II: Difference in opinion regarding the importance of competencies may be accounted for by selected respondent characteristics.

Basic Assumptions

The following assumptions underlie this research:

1. It was assumed that the post-secondary foodservice educators participating in the study will reply conscientiously to each of the questionnaires.

2. It was assumed that the competencies identified were representative of those needed by students in the foodservice programs at the post-secondary level.

3. It was assumed that the instructors and program directors who chose to participate in the study did not differ from those who chose not to participate.

Scope and Limitations of the Study

Instructors and coordinators of foodservice programs in Texas post-secondary institutions during the 1984-85 school year were given the opportunity to respond to the survey. The institutions represented the following foodservice programs: culinary arts, dietetic technology, foodservice supervision, nursing home foodservice, and restaurant management. Since it was anticipated that not all respondents to the first questionnaire would complete all of the Delphi rounds, all instructors and program coordinators were used. Responses of the final Delphi round provided the data for the statistical analysis of items not reaching consensus.

The Delphi questionnaire was developed using competency information supplied by the advisory committee. The committee was composed of representatives from foodservice businesses and industry, post-secondary educators in foodservice, including at least one representative from culinary arts, dietetic technology, foodservice supervision, and restaurant management, and the post-secondary vocational home economics education program consultant from the Texas Education Agency.

Definition of Terms

Advisory Committee--the group of experts including representatives from foodservice businesses and industry, post-secondary educators in the foodservice areas of culinary arts, dietetic technology, foodservice supervision, restaurant management, and nursing home foodservice, and the post-secondary vocational home economics program consultant from the Texas Education Agency.

Articulation--the intersection or joining points between two levels of the same type of program (e.g., secondary and post-secondary programs; post-secondary and programs offering Bachelor of Science or Bachelor of Arts degrees.).

Communication--the interaction among programs either written or verbal.

Competencies--knowledge, skills, affective behaviors and judgments needed by students seeking employment in any foodservice occupations.

Competency Indicators--training, experiences and practices of students seeking employment in any of the foodservice occupations.

Consensus--70 percent agreement (significant at .05 level) among those responding to the survey (this percentage was set by the advisory committee.)

Expert--one who teaches, administers, or works in one of the five foodservice areas.

Food Service Programs--any program in the Texas Education Agency which is funded under the divisions of Health Occupations, Home Economics, Industrial Division, or Distribution and Marketing. The following programs are addressed in the study:

Culinary Arts--a program of study which is funded by the Texas Education Agency through the Industrial Division. This course of study prepares the student to enter a job as a cook.

Dietetic Technology--a program of study funded by the Texas Education Agency through the Health Occupations Division. This course of study prepares the student to enter a job as a dietetic technician.

Foodservice Supervision--a program of study which is funded by the Texas Education Agency through the Health Occupations Division. This course of study prepares the student for an entry-level supervisory position in institutional foodservice.

Nursing Home Foodservice--a program of study which is funded by the Texas Education Agency through the Health Occupations Division. This course of study prepares the student for an entry-level supervisory position in nursing home foodservice.

Restaurant Management--a program of study which is funded by the Texas Education Agency through the Distribution and Marketing Division. This course of study prepares the student for an entry-level supervisory position in a commercial foodservice establishment.

Post-Secondary Program--program of education beyond the secondary level not leading to a baccalaureate degree.

Secondary Program--education beyond the primary level.

CHAPTER II

REVIEW OF RELATED LITERATURE

The primary focus of the review of literature was on the three areas which related to issues involved in identifying competencies common among post-secondary foodservice programs. These areas include: (1) the nature of competencies and competency-based education; (2) competency studies in foodservice programs; and (3) a description of the Delphi forecasting technique.

Competencies and Competency-Based Education

For the last decade, competency-based education has received considerable attention. This attention is a result of the current period of change in American life and the quality of education. Some of the more important of these factors are demographic shifts, economic conditions and technological innovation and change. Educational issues include lack of discipline, lack of financial support, qualifications of administrative and instructional personnel, and lack of up-to-date equipment (Newton, 1983). In 1976, Hall and Jones specified four events which they believed provided the basis,

opportunity, and need for forcing improvement in educational and training programs:

1. A teacher surplus.
2. A shift in expectations about college education by society and students.
3. Public demand for accountability in professional training.
4. The coincidental timing of research and development efforts related to instruction and learning (p. 2).

In response to these changes and issues mentioned above, much consideration has been given to competency-based education as an alternative to conventional instructional methods. Despite an impressive body of literature on the subject, there seems to be a lack of a commonly accepted definition of "competency" or "competency-based education."

It is important to define competence because of trends in education which have an impact on implementing practices as if there were one correct definition held as common knowledge. Attempts to answer the question "What is competence?" evoke complicated responses. A comprehensive definition of competence is provided by Robert White (1959), who defines competence as "an organism's capacity to interact effectively with its environment" (p. 297). Larrie Gale and Gaston Pol (1975) discuss competence from an educator's point of view:

> Competence by definition is tied to a position or role. The ligatures binding the two are abilities, knowledge, skills, judgment, attitudes and values required for successful functioning in the

> position or role. That is, possession of the critically required abilities, knowledge, judgment, skills, attitudes and values--and proficient use of the same--is what yields competence in an individual (p. 20).

Finally, Corcoran (1976) ties together the concepts of competence and the education process. He says:

> The competency-based approach begins with the definition of the knowledge, skills, and attitudes required for successful performance in a particular role. Demonstrated competence under realistic conditions becomes the basis for awarding credentials (pp. 4-5).

With this definition, Corcoran (1976) reveals the nature of most competency-based programs. Whereas traditional programs of education award status on the basis of time spent, competency-based education defines worth in terms of ability. The time-based approach involves a collective entry of a diverse group of students into a regimented program of education that leads to graduation. Specific problems associated with this approach include the inability to accommodate either fast or slow learners and the waste involved as enrollment slots left vacant by program dropouts remain unfilled (Justesen, 1983).

An alternate definition of aptitude, as it relates to education, explains some of the theoretical background of competency-based education. According to Carroll (1963), aptitude is the amount of time required by the learner to master a learning task. Essentially, Carroll's definition of aptitude implies that a student can attain mastery of a learning task if

that student is given enough time. In traditional education, time is the constant and learning is the variable. However, in a competency-based approach, time becomes the variable that is determined by the needs and capabilities of the student (Hall & Jones, 1976). The result is a change in emphasis from quantity to quality.

Goldhammer and Weitzel (1981) remind us, however, that there is no one theoretical or operational definition for competency-based education. The problem of definition is related to the range of educational programs, programs serving populations of various age and educational levels, and differing types of instruction or testing. The authors also caution researchers to keep separate the ideas of minimum competency testing, which is primarily concerned with setting standards in K-12 education, and competency-based education which is a complex attempt to improve many aspects of the instructional system.

McAshan (1979), who believes that the competency-based education movement is a good example of a change that may improve the quality of instructional programs, provides a general description of competency-based programs:

> A competency-based education (CBE) program is the one in which the desired learning outcomes -- usually referred to as competencies which represent the specific instructional intents of the program and the behavioral outcomes... -- are specified in advance in written form (p. 30).

Hall and Jones (1976) describe competencies as being skills or behaviors that have been derived from explicit

conceptualizations of the desired outcomes of learning. Competencies are also stated so that evaluation of student learning can be made through observation of behavior. These competencies or learning objectives are known by the student in advance of the learning experience, as are the levels of mastery to be used in judging successful achievement (Hall & Jones, 1976).

These previous discussions of competency-based education point out the basis of the CBE movement: the pre-statement of the knowledge, skills, and abilities a person should possess as a result of participating in the instructional process. These competencies represent the instructional intent of a program and are stated as specific goals to be achieved (McAshan, 1979). From this discussion it seems appropriate that pre-stated competencies should be usable as tools in communicating course content. Communication of course content could facilitate articulation between secondary and post-secondary levels and among courses at any level. For vocational education in particular, communication of course content provides the opportunity for evaluation and input by prospective employees.

Competencies in Food Service

Competencies for a particular course of study represent the expected knowledge, skills, and abilities possessed as a result of participation in that instructional program. The purpose of

participating in a particular course is to acquire those competencies. Therefore, by successfully completing a foodservice course of study one would expect to possess the knowledge, skills, and abilities needed to be employable in that particular area of the foodservice industry.

A review of the literature dealing specifically with competencies in the foodservice courses revealed studies of secondary, post-secondary, adult education, and military programs. Much of the information on foodservice competencies was in the form of materials and teaching guides. These curriculum guides and courses addressed varying amounts of different foodservice content. For example, Hepburn and Shin (1981) presented a competency-based vocational course on foodservice. This work, sponsored by the Illinois State Office of Education, covered 15 instructional areas, including orientation, sanitation, management, food and beverage preparation, and dining area and kitchen maintenance. The Ohio State University National Center for Research in Vocational Education (1975) adapted a course from military curriculum materials. This course emphasized principles of nutrition and menu planning. Another competency-based program written by the British Columbia Department of Education (1983) was designed as a curriculum guide for the hospitality/tourism industry. Topics covered in modules range from human relations and government/ industry interrelationships to nutrition and breakfast cookery.

The literature offered other examples of competency- based foodservice programs (Crabtree and Baum, 1982; Waskey, 1978; Oregon State Department of Education, 1979). However, little attention has been given to describing how the competencies were determined for each course.

A comprehensive study of occupational foodservice education in Wisconsin provided a competency-based articulated model for secondary and post-secondary schools (Brainerd and Barton, 1975). The project presented a curriculum model which included 13 foodservice job titles grouped into three major categories: production, service, and mid-management jobs. Job competencies are grouped into five major categories: general knowledge competencies, food preparation competencies, serving competencies, work simplification and maintenance competencies, and management and supervision competencies. Competencies for this project were compiled from a review of related literature. The list of competencies was then reviewed and modified by a competency identification committee. Employed foodservice personnel were given an opportunity to provide feedback on the competencies needed for specified jobs. This survey data was then used as the basis for determining articulation of competencies among foodservice programs.

The American Dietetic Association has provided competencies in the areas of foodservice systems management and community dietetics. Both publications were produced by Baird and

Sylvester, (1983). The purpose of these studies was to delineate the acceptable role for entry-level community dietetic and foodservice systems management personnel. The acceptable role described for these personnel encompassed the responsibilities and the requisite knowledge necessary for competent performance at each level of practice. A working committee composed of educators, employers, and practitioners in foodservice systems management and community dietetics was selected. The committee developed a list of competencies based on a literature review and a content analysis of job descriptions. This tentative list was administered to a random sample of practitioners to determine if entry-level practitioners performed the responsibilities. Results of the survey were compared to the previously identified responsibility statements gathered from the Association membership. The responsibility statements were modified and matched with performance statements by the committee. The Advisory Committee then made final revisions in terminology and organization. The competencies were designed to be used in developing credentialing examinations, standards of practice in education, and self-study guides.

Delphi Method

The Delphi method, a predictive consensus or forecasting technique, has been used in a variety of contexts, including technical forecasting, but is particularly suited to those

situations where judgmental information is most valuable. A review of literature on the Delphi methods reveals several definitions. Helmer and Rescher (1959) listed the Delphi technique among consensus procedures and defined it as ". . . a carefully designed program of sequential individual interrogations (best conducted by questionnaire) interspersed with information and opinion feedback..." (p. 47). The Delphi technique was considered a series of conferences in writing by Rasp (1973), who, focusing on the predictive nature of the Delphi, stated that the goals of the Delphi are "to collect judgments and establish consensus about future probabilities in terms of such variables as time, quality, and/or desirability of some future state" (p. 30). W. Timothy Weaver (1971) described the Delphi technique as "an intuitive methodology for organizing and sharing 'expert' forecasts about the future" (p. 67). Linstone and Turoff (1975) consider the use of the Delphi as more of an art than a science and have provided the following definition of the Delphi technique:

> Delphi may be characterized as a method for structuring a group communication process so that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem (p. 3).

Linstone and Turoff (1975), Rasp (1973), and Dalkey (1972) have discussed features of the Delphi. The researchers listed anonymity as one of the keys to the successful use of the Delphi. According to Dalkey (1972), anonymity of individual responses

tends to reduce the effect of dominant individuals. Another feature of the Delphi is controlled feedback (Rasp, 1973; Linstone and Turoff, 1975; Dalkey, 1972). This feedback provides the opportunity for respondents to see other participants' collective responses and to revise their own views. At the same time, controlling the feedback reduces unnecessary, inefficient, and irrelevant communication or "noise." Dalkey (1972) adds a final characteristic of the Delphi--statistical group response. Use of a statistical definition of the group response reduces group pressure for conformity and possibly even more important, assures that the opinion of every member of the group is represented.

The Delphi process exists in two forms. One form, labeled "real-time Delphi" or "Delphi conference," makes use of a computer to compile group results, thereby eliminating the delay caused in summarizing results by the research team. The other more common form of the Delphi is a pencil-and-paper version usually referred to as a "Delphi Exercise" or "Conventional Delphi." With this form the research team designs the questionnaire that is sent to the respondents. Upon return of the questionnaires, the research team summarizes the results, then uses these results to develop a new questionnaire which is again sent to the respondent group. Respondents are usually given at least one chance to re-evaluate their original answers based upon examination of the group response.

Advantages of the Delphi technique, according to Linstone and Turoff (1975), Helmer and Rescher (1959), Dalkey (1972), and Rasp (1973) are:

1. The technique is appropriate for use with persons from diverse backgrounds.
2. More individuals can be included in the decision making process than can effectively interact in a face-to-face exchange.
3. It is more economical than group meetings.
4. It eliminates problems associated with group meetings such as persuasiveness of certain individuals, unwillingness to abandon publicly expressed opinions, and the bandwagon effect of majority opinion.
5. It provides a highly motivating environment for respondents through use of feedback.
6. It increases the objectivity of input from the respondents.
7. It increases the feeling of personal responsibility for the outcome.
8. It lends objectivity to the outcomes through use of systematic procedures.

As with any research method, the Delphi is subject to certain problems which can cause disappointing and useless results. Some common problems are listed by Linstone and Turoff (1975):

1. Imposing researcher views and preconceptions of a problem upon the respondent group by overspecifying the structure of the Delphi and not allowing for the contribution of other perspectives related to the problem.

2. Assuming that Delphi can be a surrogate for all other human communications in a given situation.

3. Poor techniques of summarizing and presenting the group response and ensuring common interpretations of the evaluation scales utilized in the exercise.

4. Ignoring and not exploring disagreements, so that discouraged dissenters drop out and an artificial consensus is generated.

5. Underestimating the demanding nature of a Delphi and the fact that the respondents should be recognized as consultants and properly compensated for their time if the Delphi is not an integral part of their job function (p. 6).

Other problems associated with the Delphi have been raised in the literature (Welty, 1971; Sackman, 1974; Linstone and Turoff, 1975). The tendency to discount the future, the urges to predict and oversimplify, illusory expertise, sloppy execution by both researcher and respondent, optimism-pessimism bias, overselling (or improper use), and deception in providing feedback are all problems associated with the Delphi technique. Though Linstone and Turoff (1975) provides a general discussion of these problems in relation to the Delphi, most of the problems are not unique to the Delphi and must be guarded against in any research effort.

Summary

Although there are problems regarding definitions of competence and competency-based education, there appears to be agreement that the use of pre-stated competencies can facilitate the development of standards of practice in education which promote accountability. The competency-based approach is also useful in structuring courses and study guides. In addition, vocational educators find the statement of competencies helpful in communicating with employers about work roles and performance standards.

In the area of foodservice, much of the literature on competency-based programs concentrated on courses which use pre-stated competencies. While the competencies for these courses were provided, little attention was given to the method by which these competencies were determined. Those studies that explained how their competencies were compiled began with a review of the literature which identified specific competencies. After developing a list of competencies from the literature, the researchers submitted their list of competencies to a competency identification committee for suggestions. Employed foodservice personnel were then surveyed to determine the industry's perception of needed competencies. This was the final list of competencies used in the research articulation model. Much the same method was used in the development of competencies

for community dietetics and foodservice systems management. Again, a review of literature provided the basis for the list of competencies submitted to entry-level personnel. Their research then went a step further and compared the competencies reported by practitioners with those competencies designated by the working committee. After revisions in terminology by the advisory committee, the list of competencies was considered complete. All of the studies that described the development of foodservice competencies made use of a panel of experts.

The Delphi technique was designed to provide a structured method for discovering group consensus. In the most common usage of this method, a monitor team designs a questionnaire to obtain initial input from a group. Participants have one or more chances to revise their responses based on the feedback of the group response to the previous questionnaire. The Delphi has the advantage of eliminating many of the problems found in working with group processes.

CHAPTER III

METHODS AND PROCEDURES

The primary purpose for conducting the research was to determine if a consensus of opinions exists among post-secondary foodservice instructors and program coordinators regarding the competencies needed by students in foodservice programs. The design of the study consisted of identifying the population to be surveyed, constructing the instrument, following specified procedures for conducting the Delphi rounds, and analyzing the data.

Selection of Sample

The population for the study consisted of all currently employed instructors and program coordinators in post-secondary culinary arts, dietetic technology, foodservice supervision, restaurant management, and nursing home foodservice programs. To identify these persons, a letter was sent to the directors of the post-secondary foodservice programs in Texas requesting participation in the study. An Instructor and Instructional Area Information form, sent with the request letter, provided space for information about each instructor. This process identified 71 instructors and program coordinators. Since each member of

the total population, as defined, was a potential respondent, no sampling procedure was necessary.

Design and Development of Instruments

The Delphi questionnaires in the study were developed to measure consensus of educators on the relative importance of competencies needed by students entering foodservice industries. The initial questionnaire was developed using the input of the advisory committee. The advisory committee was set by the Texas Education Agency and included instructors representing each of the five foodservice areas. Each instructor was responsible for bringing an industry representative to serve on the committee.

Post-secondary foodservice programs in Texas were examined to identify general curriculum concepts and skills taught in the program. This was done by means of a systematic study of the course descriptions, course content and degree plans for each post-secondary foodservice program in Texas. The advisory committee evaluated this information and identified curriculum areas held in common by culinary arts, dietetic technology, foodservice supervision, restaurant management, and nursing home administration. After identifying several common curriculum areas, advisory committee input was used to specify common essential competencies within each of the curriculum areas. The initial Delphi questionnaire was based upon these identified common competencies, an analysis of course objectives collected

from each post-secondary foodservice program, and a study of existing task analyses in the areas identified.

Seventeen competencies and 211 subcompetencies were included in the initial instrument. The 17 competencies were as follows:

1.0 Provide information of target market food and nutrition needs.

2.0 Advance practitioner competence.

3.0 Promote positive working relationships with other workers.

4.0 Utilize current foodservice systems information to interface areas of similarity.

5.0 Utilize menu as the focal point in the overall control processes for the foodservice system in area of responsibility.

6.0 Maintain foodservice subsystems, including procurement, food production, food distribution and service.

7.0 Supervise utilization of foodservice system resources, including human, material, physical and operational resources.

8.0 Follow Quality Assurance (QA) Program procedures for area of responsibility.

9.0 Manage business responsibilities related to food production and service.

10.0 Utilize appropriate safety practices and emergency procedures.

11.0 Maintain appropriate standards of sanitation.

12.0 Use nutritional information in planning, preparing and serving food.

13.0 Select, use and care for foodservice equipment.

14.0 Receive, store, and issue food and supplies.

15.0 Use appropriate food production techniques.

16.0 Utilize appropriate customer service procedures.

17.0 Transport food, beverages and equipment to and from serving location.

The initial instrument was submitted to the advisory committee for evaluation. A numerical rating scale was used as a means of obtaining opinions regarding the relative importance of each competency in each of the foodservice programs. Five options were provided for obtaining an indication of the degree of importance each respondent attached to each competency. The options ranged from unimportant, assigned a value of one (1), to very important, assigned a value of five (5). The five options were as follows: unimportant (1), slightly important (2), moderately important (3), important (4), and very important (5).

In addition to rating the items, the advisory committee suggested a change in wording on some of the items and the addition of other items. As a result of the committee's evaluation, refinements were made in the competency and

subcompetency statements. Members also suggested that another competency be added to the instrument. The eighteenth competency was as follows:

18.0 Utilize computer systems to meet management control objectives.

The result of this developmental process was the Round I questionnaire, an instrument containing 18 competencies and 215 subcompetencies. A copy of the Round I instrument appears in Appendix A.

A general information sheet was included with the Round I questionnaire. This information sheet provided background information on each participant's education, teaching experience, foodservice experience, non-teaching activity in the hospitality industry, and age. A copy of the respondent Data Sheet is included in Appendix A.

Collection of Data

The study was conducted during the Fall of 1984 and the Spring of 1985. All 71 identified instructors and program coordinators employed in Texas post-secondary foodservice programs were invited to participate in the study.

Round I

The initial Delphi instrument for Round I contained the 18 competencies and 215 subcompetencies identified as potentially

needed by students entering foodservice industries. Respondents were asked to judge the importance of each competency in relation to program success in his/her respective area. Space was provided for comments on each item of the questionnaire. The instrument and respondent data sheet were sent to each respondent with a letter stating the purpose of the study and a brief explanation of the Delphi technique. To facilitate prompt response, an addressed, postage-paid envelope was provided. Copies of the cover letter, respondent Data Sheet and instrument, which were sent to all instructors in Round I of the study, may be found in Appendix A.

Round I questionnaires were sent to the 71 instructors and program coordinators in February, 1985. The participants were asked to return the questionnaire by a specified deadline. Due to unexpected problems with the mail system and spring break at some of the schools, the return deadline was adjusted to a later date. In the time allocated for Round I, four packets were returned unopened because the addressee had moved and/or no longer taught at that school. Of the 67 questionnaires that apparently reached the addressees, 35 (52 percent) were returned completed. These 35 respondents provided the basis for the study. The opinions of these respondents regarding the importance of each competency and subcompetency provided the feedback data for Round II of the Delphi process.

The objective of the Delphi process is to move a group of independent respondents toward consensus. However, total group agreement on individual items is rarely achieved. Since no set statistical or logical level for drawing conclusions has been established for the Delphi technique, researchers may accept any level of consensus that may be deemed appropriate. For the purposes of the study, advisory committee input was used to determine a suitable level of consensus.

It was determined that on a five-point scale, consensus within a single response category would be difficult to achieve. However, directional trends would appear within two adjacent response levels (e.g., important, very important). When adjacent cells equalling 68 percent of the 35 respondents were combined, significance at the .05 level ($X^2 = 4.83$) was achieved. An agreement level of 71 percent was significant at the .025 level ($X^2 = 6.43$). Though significance at the .05 level is generally considered acceptable in survey research of this type, the advisory committee members felt that agreement of at least 70 percent of the respondents provided a more logical criterion for the assumption of consensus. This would mean that 70 percent agreement of the respondents on any Delphi item would occur less than 2.5 times in one hundred as a result of chance factors. Therefore, a 70 percent consensus level was required in the study for an item to be eliminated from the next Delphi round.

Round II

Analysis of Round I revealed respondent agreement of at least 70 percent on 16 of the 18 competencies and 160 of the 215 subcompetencies. Items on which 70 percent consensus was reached in Round I were eliminated from the second instrument. The two unresolved competency statements to be kept as part of the Round II questionnaire were as follows:

2.0 Advance practitioner competence.

17.0 Transport food, beverages and equipment to and from serving location.

The resulting Round II Delphi questionnaire was again sent to the 35 initial respondents to obtain their opinions regarding the competency and subcompetency statements on which consenses were not achieved in Round I. The controlled feedback aspect of the Delphi technique was provided in the form of mean responses from Round I for each remaining item. Approximate Round I mean responses were indicated on the questionnaire by an asterisk (*). A cover letter encouraging continued participation in the study accompanied the Round II instrument. Again, an addressed, stamped, return envelope was provided and respondents were asked to return the questionnaire by a specific date. Copies of the Round II cover letter and instrument appear in Appendix B.

Analysis of Data

The demographic data and responses to the Delphi questionnaire provided the information to be used in the analyses related to the hypotheses of the study. Descriptive statistics were used to summarize the demographic characteristics of the respondents. Frequencies and percentages aided in drawing conclusions about the respondents and in summarizing responses to the Delphi instrument.

Rounds I and II of the Delphi instrument were analyzed using a 1 by 2 Chi-Square. Sub-competencies not reaching concensus after Round II were analyzed using Kruskal-Wallis Test and Spearman Rank-Order correlation.

Descriptions of the respondents are given in Chapter IV. Analysis of the findings of the Delphi rounds related to the hypotheses of the study are also presented in Chapter IV.

CHAPTER IV

RESULTS

The purpose of the study was to obtain a consensus of opinions regarding the importance of identified competencies and subcompetencies for students entering jobs in the areas of culinary arts, dietetic technology, foodservice, and restaurant management. This chapter includes a description of the respondents, the results of the Delphi rounds, and an analysis and discussion of the items on which consensus was not reached.

Profile of Sample

The population for the study was comprised of instructors and program coordinators for the five foodservice programs of culinary arts, dietetic technology, foodservice supervision, restaurant management, and nursing home foodservice who were employed to teach in post-secondary schools in Texas during the 1984 school year. Seventy-one teachers and program coordinators were identified and sent Round I questionnaires. Reminder letters, phone calls, and duplicate mailings were made to non-respondents in an effort to secure their participation. From the 71 initial Round I questionnaires sent, 35 usable questionnaires were returned. These 35 respondents comprised the

sample representing the total population of post-secondary foodservice educators.

The post-secondary instructors responding to the questionnaire represented the five designated food technology areas: culinary arts, dietetic technology, foodservice supervision, nursing home foodservice, and restaurant management. When the respondents were asked to indicate all areas in which they taught, 20 of them indicated restaurant management, 11 indicated dietetic technology, 11 indicated nursing home foodservice, 10 indicated continuing education, five indicated culinary arts and two listed other teaching areas. Reported teaching areas total 59 rather than 35 since respondents were asked to indicate all areas in which they currently taught.

The education level of the participants was relatively high with 83 percent completing a Bachelor degree or higher level of education. The largest response category was for Master's degree representing 43 percent of the participants. Only 17 percent of the respondents indicated a level of education below a Bachelor degree. Respondents indicated a wide range of areas in which they had studied. Ten different areas were reported with food and nutrition (26 percent) and vocational education (23 percent) representing the most often reported areas. A complete list of reported areas is provided in Table 1.

TABLE 1

RESPONDENT CHARACTERISTICS

		frequency[1]	percent
1. Education:	some college	4	11.4
	Bachelor degree	6	17.1
	some graduate work		17.1
	Master degree	15	42.9
	Doctorate	2	5.7
	other	2	5.7
2. Area of Study:	Food & Nutrition	9	25.7
	Dietetics	2	5.7
	Culinary Arts	2	5.7
	Food Technology	1	2.9
	Restaurant Management	2	5.7
	Vocational Education	8	22.9
	Engineering	1	2.9
	Business Admin. & Mgt.	4	11.4
	Animal Science	1	2.9
	Psychology, Ed. Psych.	2	5.7
	No Answer	3	8.5
3. Teaching Areas:[2]	Continuing Education[3]	10	28.6
	Culinary Arts	5	14.3
	Dietetic Technology	11	31.4
	Nursing Home Foodservice	11	31.4
	Restaurant Management	20	57.1
	Other	2	5.7
4. Years of Teaching Experience:	0 - 5	16	45.7
	6 - 10	6	17.1
	11 - 15	8	22.9
	16 - 20	3	8.6
	over 20	2	5.7
5. Years of Foodservice Experience:	0 - 5	10	51.4
	6 - 10	6	17.1
	11 - 15	3	8.6
	16 - 20	4	11.4
	over 20	4	11.4

Table 1 - Continued

		frequency[1]	percent
6. Age:	20 - 29	5	14.3
	30 - 39	12	34.3
	40 - 49	8	22.9
	50 - 59	9	25.7
	over 60	1	2.9
7. Consulting in Hospitality Industry:	yes	17	48.6
	no	18	51.4
8. Own a Hospitality Business:	yes	4	11.4
	no	31	88.6
9. Percent of income from consulting or hospitality business:	20% or under	25	71.4
	20 - 40%	6	17.1
	40 - 60%	1	2.9
	60 - 80%	0	0
	over 80%	3	8.6

[1] Some subjects did not complete all items, so the N for each item may be less than 35.

[2] Respondents indicated all areas in which they taught. In many cases respondents taught in more than one area, therefore, numbers will total more than 35 respondents and percentages will total more than 100 percent.

[3] Continuing education included all respondents for foodservice supervision.

Most of the respondents had five years or less of teaching experience (46 percent). The next most often reported category was 11-15 years of teaching experience (23 percent). Eighty-six percent of the participants had less than 16 years of teaching experience.

The foodservice experience of the respondents was similar to their teaching experience with the majority reporting five years of less (51 percent). Included in that 51 percent were six respondents (17 percent) reporting no foodservice experience. Seventeen percent of the participants indicated 6-10 years of foodservice experience and 11-15 years of experience was reported by nine percent of the group. Twenty-three percent of the respondents reported 16 or more years of foodservice experience.

When asked if they did any consulting in the hospitality industry 49 percent of the respondents said "yes." Only four of the respondents (11 percent) indicated that they owned a hospitality business. For those participants who reported consulting in the hospitality industry or owning a hospitality business, 71 percent indicated that those activities accounted for less than 20 percent of their income. For a complete report of respondent characteristics, see Table 1.

Analysis of Data

Responses to the Delphi questionnaire include 35 usable responses to Round I and 35 usable responses to Round II.

Consensus for elimination of a competency or subcompetency statement after Round I was set at 70 percent agreement, within two adjacent rating categories. This level of agreement exceeded the .05 level of significance when compared to chance (X^2=3.84). This level was achieved for 17 competency statements and 151 subcompetency statements for Round I. Round II items which reached this level included the remaining competency and 39 of the remaining 54 subcompetencies.

After both rounds of the Delphi questionnaire, consensus was achieved for all 18 competencies and 190 subcompetencies. The competency statements, means, percentages, and significance levels are presented in Table 2. Concensus regarding the subcompetencies followed a similar pattern to competencies. Therefore, for efficiency of space the subcompetencies are not presented in Table 2. All subcompetency statements are listed on the instrument in Appendix A. The means and percentages are in Appendix C.

After two rounds of the Delphi questionnaire, consensus at the 70 percent level was not reached for 15 of the 205 subcompetencies included in the study. These statements and the percentage of consensus achieved for each are shown in Table 3.

TABLE 2

A SUMMARY OF COMPETENCIES REACHING CONSENSUS

	Competency	Mean	%	Significance
1.0	Provide information of target market food and nutrition needs.	3.94	71.4	.05
2.0	Advance practitioner competence.	4.03	72.4	.05
3.0	Promote positive working relationships with other workers.	4.79	97.1	.001
4.0	Utilize current foodservice systems information to interface areas of similarity.	3.72	84.8	.001
5.0	Utilize menu as the focal point in the overall control processes for the foodservice system in area of responsibility.	4.44	79.4	.01
6.0	Maintain foodservice sub-systems, including procurement, food production, food distribution and service.	4.11	71.4	.05
7.0	Supervise utilization of foodservice system resources, including human, material, physical and operational resources.	4.25	81.3	.01
8.0	Follow Quality Assurance (QA) Program procedures for area of responsibility.	4.24	84.8	.001
9.0	Manage business responsibilites related to food production and service.	4.18	79.4	.01
10.0	Utilize appropriate safety practicies and emergency procedures.	4.68	97.1	.001

Table 2 - Continued

Competency	Mean	%	Significance
11.0 Maintain appropriate standards of sanitation.	4.69	91.4	.001
12.0 Use nutritional information in planning, preparing and serving food.	4.56	97.1	.001
13.0 Select, use and care for food service equipment.	4.09	85.3	.001
14.0 Receive, store, and issue food and supplies.	4.09	82.4	.001
15.0 Use appropriate food production techniques.	4.31	82.9	.001
16.0 Utilize appropriate customer service procedures.	4.06	77.1	.01
17.0 Transport food, beverages and equipment to and from serving location.*	3.11	71.4	.05
18.0 Utilize computer systems to meet management control objectives.	4.15	73.5	.01

*This item reached consensus in Round II.

TABLE 3

A SUMMARY OF SUBCOMPETENCIES NOT REACHING A CONSENSUS AFTER ROUND II

	SubCompetency	Round I Mean	Round I %	Round II Mean	Round II %
7.1.5	Interview applicants for identified positions.	3.74	57.1	3.80	68.6
16.3	Take dining reservations determine seating needs, using space and personnel effectively.	3.57	60	3.31	65.7
16.8	Package take-out orders, and serve take-out customers.	3.14	51.4	2.89	65.7
16.9	Transfer food and dishes between floors of an establishment using a dumbwaiter.	2.83	51.4	2.26	60
16.12	Serve foods at customer's table a seated banquet, or special occasion.	3.49	54.3	3.31	62.9
16.16	Clear items from table, and remove soiled items from table and stations.	3.26	54.3	3.20	62.9
16.18	Sort, count, and store utensils at designated places.	3.09	54.3	2.91	60
16.19	Itemize and total price of each order.	3.65	64.7	3.49	65.7
16.20	Present check to customer, and accept a payment or refer customer to a cashier.	3.29	51.4	3.17	57.1
16.23	Display, sell, order, and restock counter items.	3.37	60	3.14	65.7
16.25	Give tips to proper waiter/waitress.	3.35	52.9	3.09	57.1

Table 3 - Continued

	SubCompetency	Round I Mean	Round I %	Round II Mean	Round II %
17.1	Pack and transport food, beverages, utensils, and equipment.	3.20	60	3.00	68.6
17.4	Unload and deliver food and beverages.	3.06	51.4	2.80	62.9
17.5	Pick up food carts, and empty trays from patients, guests, or customers.	2.91	54.3	2.83	62.9
17.6	Pick up and return trays, dishes, utensils, and equipment to dishwashing area.	2.97	54.3	2.80	60.0

Analysis of Hypotheses

The study presented two hypotheses. The previous data served as the basis for testing the hypotheses. The stated hypotheses were tested by use of chi square analyses, Kruskal-Wallis K-sample test of identical population distribution and Spearman Rank-Order correlation analysis. The .05 level of significance was selected as the basis for drawing conclusions regarding the data. The results are described below.

Hypotheses I: There will be general agreement on essential competencies taught in post-secondary culinary arts, dietetic technology, food service supervision, nursing home food service, and restaurant management programs for which foodservice competencies are considered essential.

This hypothesis was tested by calculating the percentage of consensus of opinion for each of the 18 competencies and 205 subcompetencies. Seventy percent or more of the teachers from the five foodservice areas agreed on the level of importance for all of the competencies and 190 of the subcompetencies. Consensus of opinion on all of the resolved competencies fell between the "moderately important" and "important" or the "important" and "very important" categories. These ratings indicate that

teachers from all the foodservice areas feel their course content should prepare their students to perform the tasks represented by the competency and subcompetency statements. See Table 2 for a description of the 18 competencies on which consensus was reached.

There were 15 subcompetencies for which consensus of opinion was not reached indicating that these subcompetency statements represent abilities that may not be important for students in all of the foodservice areas. All subcompetencies for which consensus was not reached are presented in Table 3. With the exception of Item 7.1.5, all unresolved competencies dealt with service or catering abilities. These competencies are discussed in further detail in the section "Analysis by Competency."

Hypothesis II: Difference in opinion regarding how essential the various competencies are may be accounted for by differences in selected respondent characteristics.

The respondent characteristics had little effect on the 15 subcompetencies which did not reach consensus. Only two of the respondent characteristics seemed to have an effect on the unresolved subcompetencies, teaching area and age. With the exception of Item 7.1.5. the remaining subcompetencies dealt with the areas of service to customers and food delivery and transport. A cross tabulation indicated that teaching area

seemed to be most likely to explain lack of consensus because of the restaurant businesses' greater emphasis in the restaurant business on service, when compared to businesses represented by the other four teaching areas. To determine differences in respondents' ratings of importance of subcompetencies, the participants were grouped as either restaurant management instructors or non-restaurant management instructors. The two group ratings of each unresolved subcompetency were then compared using the Kruskal-Wallis K-sample test of identical population distribution. The Kruskal-Wallis K-sample test of identical population distribution was chosen because it utilizes ranking to make use of the ordinal data. The Kruskal-Wallis test, unlike the classic chi-square test, is not sensitive to the presence of empty cells (Conover, 1980). The results of these analyses are illustrated in Tables 4-18 and reveal that teaching restaurant management was positively related to ratings of importance for eight of the remaining 15 subcompetencies. In each case, respondents who taught in the restaurant management area rated the subcompetency as more important than respondents representing other teaching areas. As expected, the eight subcompetencies for which significance was found all relate specifically to customer service. These subcompetencies are listed in Tables 5, 6, 8, 9, 11, 12, 13, and 14.

TABLE 4

FREQUENCY DISTRIBUTION BY TEACHING AREA INSTRUCTOR SUB-GROUPS FOR ITEM 7.1.5*

Respondents' Opinion	FREQUENCY Restaurant Management	Others	Row Total	Row Rank
Not Important	0	2	2	1.5
Slightly Important	0	2	2	3.5
Moderately Important	5	2	7	8
Important	10	4	14	18.5
Very Important	5	5	10	30.5
Column Total	20	15		N = 35
Total Column Rank	377.5	252.5		K = .38 n.s.

*Item 7.1.5: "Interview applicants for identified positions."

TABLE 5

FREQUENCY DISTRIBUTION BY TEACHING AREA INSTRUCTOR SUB-GROUPS FOR ITEM 16.3*

Respondents' Opinion	FREQUENCY Restaurant Management	Others	Row Total	Row Rank
Not Important	0	5	5	3
Slightly Important	0	2	2	6.5
Moderately Important	5	5	10	12.5
Important	10	3	13	24
Very Important	5	0	5	33
Column Total	20	15		N =35
Total Column Rank	467.5	162.5		K =13.95 $p < .001$

*Item 16.3: "Take dining reservations and determine seating needs, using space and personnel effectively."

TABLE 6

FREQUENCY DISTRIBUTION BY TEACHING AREA
INSTRUCTOR SUB-GROUPS FOR ITEM 16.8*

Respondents' Opinion	FREQUENCY Restaurant Management	Others	Row Total	Row Rank
Not Important	0	6	6	3.5
Slightly Important	2	2	4	8.5
Moderately Important	10	5	15	18
Important	6	2	8	29.5
Very Important	2	0	2	34.5
Column Total	20	15		N = 35
Total Column Rank	443	187		k = 8.47
				p <.005

*Item 16.8: "Package take-out orders and serve take-out customers."

TABLE 7

FREQUENCY DISTRIBUTION BY TEACHING AREA
INSTRUCTOR SUB-GROUPS FOR ITEM 16.9*

Respondents' Opinion	FREQUENCY Restaurant Management	Others	Row Total	Row Rank
Not Important	4	7	10	5.5
Slightly Important	8	3	11	16
Moderately Important	5	5	10	26.5
Important	2	1	3	33
Very Important	1	0	1	35
Column Total	20	15		N = 35
Total Column Rank	383.5	246.5		K =.66
				n.s.

*Item 16.9: "Transfer food and dishes between floors of an establishment using a dumbwaiter."

TABLE 8

FREQUENCY DISTRIBUTION BY TEACHING AREA
INSTRUCTOR SUB-GROUPS FOR ITEM 16.12*

Respondents' Opinion	FREQUENCY Restaurant Management	Others	Row Total	Row Rank
Not Important	1	4	5	3
Slightly Important	0	1	1	6
Moderately Important	8	6	14	13.5
Important	5	3	8	24.5
Very Important	6	1	7	32
Column Total	20	15		N = 35
Total Column Rank	425.5	204.5		K = 5.22
				$p < .025$

*Item 16.12: "Serve foods at customer's table, a seated banquet, or special occasion."

TABLE 9

FREQUENCY DISTRIBUTION BY TEACHING AREA
INSTRUCTOR SUB-GROUPS FOR ITEM 16.16*

Respondents' Opinion	FREQUENCY Restaurant Management	Others	Row Total	Row Rank
Not Important	1	3	4	2.5
Slightly Important	1	2	3	6
Moderately Important	8	8	16	15.5
Important	4	2	6	26.5
Very Important	6	0	6	32.5
Column Total	20	15		N = 35
Total Column Rank	433.5	196.5		K = 6.72
				$p < .01$

*Item 16.16: "Clear items from table, and remove soiled items from table and stations."

TABLE 10

FREQUENCY DISTRIBUTION BY TEACHING AREA
INSTRUCTOR SUB-GROUPS FOR ITEM 16.18*

Respondents' Opinion	FREQUENCY Restaurant Management	Others	Row Total	Row Rank
Not Important	2	4	6	3.5
Slightly Important	3	1	4	8.5
Moderately Important	7	9	16	18.5
Important	4	1	5	29
Very Important	4	0	4	33.5
Column Total	20	15		N = 35
Total Column Rank	412	218		K = 3.36 n.s.

*Item 16.18: "Sort, count, and store utensils in designated places."

TABLE 11

FREQUENCY DISTRIBUTION BY TEACHING AREA
INSTRUCTOR SUB-GROUPS FOR ITEM 16.19*

Respondents' Opinion	FREQUENCY Restaurant Management	Others	Row Total	Row Rank
Not Important	1	4	5	3
Slightly Important	1	0	1	6
Moderately Important	4	3	7	10
Important	8	8	16	21.5
Very Important	6	0	6	32.5
Column Total	20	15		N = 35
Total Column Rank	416	214		K = 6.72 $p < .01$

*Item 16.19: "Sort, count, and store utensils in designated places."

TABLE 12

FREQUENCY DISTRIBUTION BY TEACHING AREA
INSTRUCTOR SUB-GROUPS FOR ITEM 16.20*

Respondents' Opinion	FREQUENCY Restaurant Management	Others	Row Total	Row Rank
Not Important	1	5	6	3.5
Slightly Important	0	3	3	8
Moderately Important	6	5	11	15
Important	7	2	9	25
Very Important	6	0	6	32.5
Column Total	20	15		N = 35
Total Column Rank	463.5	166.5		K = 12.63
				$p < .001$

*Item 16.20: "Present check to customer and accept payment or refer customer to a cashier."

TABLE 13

FREQUENCY DISTRIBUTION BY TEACHING AREA
INSTRUCTOR SUB-GROUPS FOR ITEM 16.23*

Respondents' Opinion	FREQUENCY Restaurant Management	Others	Row Total	Row Rank
Not Important	1	4	5	3
Slightly Important	1	3	4	7.5
Moderately Important	6	4	10	14.5
Important	9	4	13	26
Very Important	3	0	3	34
Column Total	20	15		N = 35
Total Column Rank	433.5	196.5		K = 6.52
				$p < .025$

*Item 16.23: "Display, sell order and restock counter items."

TABLE 14

FREQUENCY DISTRIBUTION BY TEACHING AREA
INSTRUCTOR SUB-GROUPS FOR ITEM 16.25*

Respondents' Opinion	FREQUENCY Restaurant Management	Others	Row Total	Row Rank
Not Important	2	5	7	4
Slightly Important	0	2	2	8.5
Moderately Important	7	6	13	16
Important	5	2	7	26
Very Important	6	0	6	32.5
Column Total	20	15		N = 35
Total Column Rank	445	185		K = 8.65
				p <.005

*Item 16.25: "Give tips to proper waiter/waitress."

TABLE 15

FREQUENCY DISTRIBUTION BY TEACHING AREA
INSTRUCTOR SUB-GROUPS FOR ITEM 17.1*

Respondents' Opinion	FREQUENCY Restaurant Management	Others	Row Total	Row Rank
Not Important	1	4	5	3
Slightly Important	3	1	4	7.5
Moderately Important	9	5	14	16.5
Important	5	5	10	28.5
Very Important	2	0	2	34.5
Column Total	20	15		N = 35
Total Column Rank	385.5	244.5		K = .79
				n.s.

*Item 17.1: "Pack and transport food, beverages, utensils, and equipment."

TABLE 16

FREQUENCY DISTRIBUTION BY TEACHING AREA
INSTRUCTOR SUB-GROUPS FOR ITEM 17.4*

Respondents' Opinion	FREQUENCY Restaurant Management	Others	Row Total	Row Rank
Not Important	2	4	6	3.5
Slightly Important	4	2	6	9.5
Moderately Important	8	5	13	19
Important	5	4	9	30
Very Important	1	0	1	35
Column Total	20	15		N = 35
Total Column Rank	382	248		K =.58
				n.s.

*Item 17.4: "Unload and deliver food and beverages."

TABLE 17

FREQUENCY DISTRIBUTION BY TEACHING AREA
INSTRUCTOR SUB-GROUPS FOR ITEM 17.5*

Respondents' Opinion	FREQUENCY Restaurant Management	Others	Row Total	Row Rank
Not Important	2	2	4	2.5
Slightly Important	6	4	10	9.5
Moderately Important	5	7	12	20.5
Important	4	2	6	29.5
Very Important	3	0	3	34
Column Total	20	15		N = 35
Total Column Rank	384	245.5		K =.72
				n.s.

*Item 17.5: "Pick up food carts, and empty trays from patients, guests, or customers."

TABLE 18

FREQUENCY DISTRIBUTION BY TEACHING AREA
INSTRUCTOR SUB-GROUPS FOR ITEM 17.6*

Respondents' Opinion	FREQUENCY Restaurant Management	Others	Row Total	Row Rank
Not Important	1	3	4	2.5
Slightly Important	7	3	10	9.5
Moderately Important	5	6	11	20
Important	6	3	9	30
Very Important	1	0	1	35
Column Total	20	15		N = 35
Total Column Rank	384	246		K = .69 n.s.

*Item 17.6: "Pick up and return trays, dishes, utensils and equipment to dishwashing area."

Two other subcompetencies for which consensus was not reached were found to be positively related to age. As respondent age increased, so did respondondent rating of importance. In other words, the older respondent was more likely to rate these two subcompetencies as important. Because of the nature of Item 16.9, regarding the use of a dumbwaiter, age was selected as a possible factor explaining the lack of consensus for the remaining subcompetencies. As expected, age was found to be positively correlated with Item 16.9 ($r_s = .52$, $p < .02$). A positive relationship was also found between age and responses to Item 7.1.5 ($r_s = 0.41$, $p < .02$). While the relationship between age and the rating of importance of the ability to interview applicants does not follow logically, other factors that are a function of age, such as foodservice experience or teaching experience, may underlie the positive correlation. The relationships between age and these subcompetencies are presented in Tables 19 and 20.

Five subcompetencies remained, for which neither age nor teaching in the area of restaurant management provided an explanation for the lack of consensus. These subcompetencies were related to sorting and storage of equipment and retrieval of trays and dishes.

Analysis by Competency

Data concerning items which failed to achieve consensus are reported by competency, noting the differences between the

TABLE 19

SPEARMAN RANK-ORDER CORRELATION BETWEEN AGE OF RESPONDENT AND INTERVIEWING OF APPLICANT

Item 7.1.5 Interview applicants for identified positions.

Relationship	Coefficient	Level of Significance
Age vs. Interviewing Skills	$r_s = 0.406$	$p < .002$

TABLE 20

SPEARMAN RANK-ORDER CORRELATION BETWEEN AGE OF RESPONDENT AND USE OF A DUMBWAITER

Item 16.9 Transfer food and dishes between floors of an establishment using a dumbwaiter.

Relationship	Coefficient	Level of Significance
Age vs. Use of Dumbwaiter	$r_s = 0.516$	$p < .02$

sub-groups of respondents. General conclusions regarding competencies and subcompetencies needed by students entering the varied foodservice industries are presented in the final conclusions. The sequence of the data presented in this section will follow the numerical sequence of the Delphi questionnaire competency and subcompetency items. Descriptions of subcompetencies under each major competency may be found on the instrument in Appendix A.

Competency 1.0 Provide information of target-market food and nutrition needs.

Round I respondents indicated agreement on the importance of providing information concerning a target market's food and nutrition needs. Seventy-one percent of the respondents marked this competency as either moderately important (34 percent) or important (37 percent). Neither of the two subcompetencies related to this competency achieved consensus in Round I. In Round II, respondents agreed on the level of importance of both subcompetencies. Item 1.1 was rated by 85 percent of the respondents as either moderately important (40 percent) or important (46 percent). Agreement on Item 1.2 was also between the moderately important (29 percent) and important (51 percent) categories.

Competency 2.0 Advance practitioner competence.

The responses to Round I indicated general agreement with Competency 2. However, six Round I respondents failed to show an

opinion regarding the importance of this competency. Of the 29 responses, 38 percent thought this competency was important and 34 percent said the competency was very important. As might be expected, all six related subcompetencies achieved consensus in Round I. At least 80 percent ($p<.001$) of the respondents rated each of the six subcompetencies as either important or very important.

Competency 3.0 Promote positive working relationships with other workers.

Round I responses to the importance of promoting positive relationships with co-workers showed strong agreement. Ninety-seven percent said the competency was either important (15 percent) or very important (82 percent). The three related subcompetencies also reached consensus of opinion in Round I.

Competency 4.0 Utilize current foodservice system information to interface areas of similarity.

Although responses to Round I indicated general agreement with Competency 4, two of the three related subcompetencies failed to reach agreement in Round I. After the second round of the questionnaire, Items 4.1 and 4.3 reached consensus. Competency 4.0 and the three subcompetencies were all rated as either moderately important or important by the questionnaire respondents.

Competency 5.0 Utilize menu as the focal point

in the overall control processes
for the foodservice system in
area of responsibility.

Seventy-nine percent of the responses to Round I indicated agreement regarding the importance of using the menu as a focal point in the control of the foodservice system. Fifteen percent of the respondents said the competency was important and 64 percent rated the competency as very important. All three related subcompetencies were rated as important and very important by at least 80 percent of the respondents to Round I.

Competency 6.0 Maintain foodservice subsystems, including procurement, food production, food distribution and service.

Agreement with the importance of Competency 6 was indicated by 71 percent of the respondents to Round I. In addition, 13 of the 17 related subcompetencies achieved consensus in Round I. The remaining four subcompetencies reached agreement as being either moderately important or important in Round II.

Competency 7.0 Supervise utilization of food service system resources, including human, material, physical and operational resources.

Although three of the 35 respondents neglected to indicate their opinion regarding the importance of Competency 7.0, 81 percent of the remaining 32 respondents said the competency was either important (34 percent) or very important (47 percent). This agreement concerning the importance of the competency is supported by the responses on the 43 related subcompetencies. Of the 43 subcompetencies, consensus of opinion was achieved on 37 subcompetencies in Round I responses. Five of the six remaining subcompetencies reached agreement in Round II. The remaining subcompetency, Item 7.1.5, "Interview applicants for identified positions," showed that 69 percent of the Round II respondents regarded it as either important (40 percent) or very important (29 percent). While responses are significant at the .05 level ($X^2 = 4.83$), the percent of responses less than 70 percent keeps the subcompetency from reaching consensus according to the criteria set for the study. Analysis by teaching area sub-groups failed to provide an explanation for this lack of consensus. In other words, the instructors of restaurant management did not differ significantly from the other instructors in their ratings of importance for this subcompetency. The Spearman Rank-Order correlation did reveal a positive relationship for age. As the age of the respondent increased, so did the rating of importance for this subcompetency ($r_s = 0.41$, $p < .02$). It is important to note that although significant, this is a moderately weak relationship. The results of this test are presented in Table 19.

Competency 8.0 Follow Quality Assurance Program procedures for area of responsibility.

Eighty-five percent of those responding to Round I indicated a consensus of agreement regarding the importance of following Quality Assurance Procedures. In addition, three of the four related subcompetencies reached consensus in Round I. After Round II, the remaining subcompetency (Item 8.3) showed agreement, with 77 percent of the respondents rating it as either moderately important (17 percent) or important (60 percent). These results show agreement to a rating of slightly less importance for this subcompetency since competency 8.0 and subcompetencies 8.1, 8.2, and 8.4 were all rated as either important or very important by Round I respondents.

Competency 9.0 Manage business responsibilities related to food production and service.

Participants in the study rated competency nine as either important (32 percent) or very important (47 percent) indicating 79 percent agreement. Consensus was also achieved in Round I on 24 of the 26 related subcompetencies. Results of Round II responses indicated agreement on the two remaining subcompetencies.

Competency 10.0 Utilize appropriate safety practices and emergency procedures.

Respondents in the study strongly agreed with the importance of being able to use safety and emergency procedures. Consensus over 88 percent resulted in the elimination of Competency 10 and the four related subcompetencies after Round I.

Competency 11.0 Maintain appropriate standards of sanitation.

Ninety-one percent of the Round I respondents agreed that the ability to maintain sanitation standards was either important (8 percent) or very important (83 percent). Not surprisingly, the same agreement existed for the importance of each of the eight related subcompetencies in Round I. For subcompetency 11.2, regarding the maintenance of personal grooming and hygiene standards, 100 percent of the respondents indicated agreement.

Competency 12.0 Use nutritional information in planning, preparing and serving food.

The use of nutritional information was rated as important (38 percent) or very important (59 percent) by 97 percent of the Round I respondents. Seventy percent consensus also eliminated all eight of the related subcompetencies from further consideration following Round I.

Competency 13.0 Select, use and care for foodservice equipment.

Participants in Round I of the study indicated an agreement with the importance of the ability to select, use and care for

foodservice equipment. Eighty-five percent consensus regarding the competency and the three related subcompetencies was reached in Round I.

Competency 14.0 Receive, store and issue food and supplies.

General agreement regarding the importance of Competency 14.0 was reached in Round I. Consensus over 70 percent resulted in the elimination of the competency and the five related subcompetencies after Round I

Competency 15.0 Use appropriate food production techniques.

Eighty-three percent of the Round I participants felt strongly that the ability to "use appropriate food production techniques" is important. Seventy percent or greater consensus eliminated this competency and 24 of the 35 subcompetencies from further consideration following Round I. Results of the Round II responses indicated agreement concerning the importance of the remaining 11 subcompetencies.

Competency 16.0 Utilize appropriate customer service procedures.

General agreement regarding the importance of Competency 16 was reached in Round I. Consensus was also reached in Round I regarding ten of the 25 related subcompetencies. Five of the remaining 15 subcompetencies achieved consensus in Round II. The remaining ten subcompetencies fell below the 70 percent agreement level. Those subcompetencies were as follows:

16.3 Take dining reservations and determine seating needs, using space and personnel effectively.

16.8 Package take-out orders, and serve take-out customers.

16.9 Transfer food and dishes between floors of an establishment using a dumbwaiter.

16.12 Serve foods at customer's table, a seated banquet, or special occasion.

16.16 Clear items from table, and remove soiled items from table and stations.

16.18 Sort, count, and store utensils at designated places.

16.19 Itemize and total price of each order.

16.20 Present check to customer, and accept a payment or refer customer to a cashier.

16.23 Display, sell, order, and restock counter items.

16.25 Give tips to proper waiter/waitress.

The Kruskal-Wallis analysis of the ten unresolved subcompetencies revealed that the teaching area of restaurant

management was positively related to eight of the ten subcompetencies. The results of these tests are presented in Tables 4-18. When subjected to correlation analysis, age was found to be related to Item 16.9, "Transfer food and dishes between floors of an establishment using a dumbwaiter" (r_s =.52, p <.002). This information is presented in Table 20. The relationship between age and use of a dumbwaiter is positively correlated, however it is a moderately weak relationship. None of the variables tested showed any significant relationship to the ratings of importance for the remaining Item 16.18 which related to sorting, counting and storing utensils.

Competency 17.0 Transport food, beverages and equipment to and from serving location.

Round I participant responses did not meet the criteria for consensus concerning the importance of transporting food, beverages and equipment to and from serving locations. Only one of the six subcompetencies reached agreement in Round I. After Round II agreement was indicated for the competency and one other subcompetency. The remaining four subcompetencies failed to reach agreement at the 70 percent level. Those subcompetencies were as follows:

17.1 Pack and transport food, beverages, utensils, and equipment.

17.4 Unload and deliver food and

beverages.

17.5 Pick up food carts and empty trays from patients, guests, or customers.

17.6 Pick up and return trays, dishes, utensils and equipment to dishwashing area.

These remaining subcompetencies did not appear to be related to the variables of restaurant management teaching area or age.

Competency 18.0 Utilize computer systems to meet management control objectives.

Consensus was achieved in Round I regarding the importance of the ability to "utilize computer systems to meet management control objectives." Agreement regarding the importance of two of the four related subcompetencies was also reached in Round I. The remaining subcompetencies reached agreement in Round II.

Summary of Findings

There were 15 subcompetencies not reaching consensus after Round 2. Consensus of 70% or better was reached on all 18 competencies and on 190 subcompetencies. The only respondent characteristics found to be related to those items not reaching consensus were teaching area and age. Lack of consensus for eight of the subcompetencies was explained by teaching area.

Responses to two other subcompetencies were positively correlated with age. No explanation was found for lack of consensus on the five remaining subcompetencies.

Based on the results, Hypothesis I was accepted. However, the inability of the study to explain all subcompetencies not reaching consensus leads to a partial acceptance of Hypothesis II.

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS

The purposes of this chapter are to summarize the procedures used in the study, to identify the findings and conclusions derived from an analysis of the data, and to make recommendations for use of the findings. These sections are presented below. It should be noted that the study was limited to 35 foodservice instructors and program directors of post-secondary foodservice programs in the state of Texas. Due to the small sample size the study may not be applicable to other regions, locations or states.

Summary of the Study

The purpose of the study was to identify those competencies and subcompetencies held in common by the food technology areas of culinary arts, dietetic technology, foodservice supervision, nursing home foodservice, and restaurants management. In order to do this a list of competencies and subcompetencies was compiled from a review of literature and the input of an advisory council. The resulting list was then evaluated by the advisory council and revised according to their recommendations. The final list of competencies and subcompetencies was submitted to

all identified post-secondary food technology instructors and program coordinators in the state of Texas. A Delphi process was used in an attempt to secure agreement regarding the importance of the competencies and subcompetencies.

The initial Delphi questionnaire contained 18 competencies and 205 subcompetencies. The instrument was mailed to the entire population of 71 post-secondary food technology instructors and program coordinators in Texas. Respondents to the questionnaire totaled 35. Seventeen competencies and 151 subcompetencies achieved consensus at the 70 percent level in the first round of the Delphi study. The Round II questionnaire consisted of the remaining competency and 54 subcompetencies which failed to achieve consensus in Round I. Respondents to the second questionnaire agreed on the importance of the remaining competency and subcompetencies at the 70 percent level or above. At the end of the Delphi rounds, 15 subcompetencies had failed to achieve consensus.

Responses to the remaining 15 subcompetencies were analyzed by the variables of teaching area and age to determine if any significant differences in responses existed. Differences in responses for all but five of the subcompetencies were explained by these variables.

Summary of Findings

The findings of the study were as follows:

1. Significant agreement existed among the post-secondary

food technology instructors and program coordinators in Texas regarding the importance of the 18 competencies and 190 of the subcompetencies. All 18 competencies and 190 of the subcompetencies were found common to all five foodservice areas, culinary arts, dietetic technology, foodservice supervision, nursing home foodservice and restaurant management.

2. Of the 17 competencies reaching consensus in Round I, 15 were agreed on at the important/very important level. The other two competencies were considered moderately important/important. All subcompetencies on which the level of importance was agreed in Round I were considered either moderately important/important or important/very important. The remaining competency reached consensus in Round II, with a mean rating of 3.11 indicating agreement between the moderately important/important categories. Of the 39 subcompetencies on which agreement was reached in the second round, 32 were rated as moderately important/important. The remaining seven subcompetencies were rated as important/very important.

3. Most of the respondent characteristics had no effect on lack of consensus. Only two of the respondent characteristics age and teaching area had any effect on subcompetencies not reaching consensus after Round II.

4. After two Delphi rounds, 15 subcompetencies failed to reach consensus. Differences in respondent characteristics were

related to the lack of concensus regarding ten of the remaining subcompetencies. The discrepancy in opinions regarding eight subcompetencies discrepancy in opinions was found to be related to teaching in the area of restaurant management. Lack of agreement on the importance of two other subcompetencies was related to respondent age.

5. Four of the unresolved subcompetencies, for which no explanation of the lack of agreement was found, dealt with the transport of food, beverages, and equipment to and from serving location. The other unresolved subcompetency dealt with sorting, counting, and storing utensils.

Conclusions

Data for the study were obtained from post-secondary foodservice program coordinators and instructors. Based on the analyses of the responses of the instructors, the following conclusions were drawn:

1. Since consensus was reached regarding the importance of 208 of the 223 items on the Delphi questionnaire, it can be concluded that students entering the various areas of foodservice should be trained in similar competencies. Information from the study could be distributed to those responsible for curriculum development in the various post-secondary foodservice programs. The list of competencies and subcompetencies, which have been determined to be important to all foodservice areas, should be valuable for use as a guide for determining course content.

2. Since all 18 competencies and 190 of the subcompetencies were found to be at least moderately important and most were important to very important, the listing of competencies and subcompetencies should serve as a valuable tool for state and local education agency staff to use in developing curricula and coordinating course content among various foodservice programs. The list of competencies and subcompetencies can also be used as a tool for evaluating existing curriculum content.

3. Subcompetencies not reaching concensus were not contingent on the educational level, type of degree held, major area of study while in school, years of teaching experience or the years of foodservice experience of the respondents. Therefore, the competencies and subcompetencies listed are much stronger since they seem to be unaffected by any of these variables.

4. Although the majority of competencies and subcompetencies were important to all foodservice areas, subcompetencies relating to customer service and food and beverage transport were not agreed on as important. This indicates that some consideration should be given to foodservice area differences, as well as commonalities, when coordinating programs.

5. Eight of the subcompetencies which failed to reach consensus were related to teaching in the area of restaurant

management. It was therefore concluded that these service-related competencies might receive more emphasis in restaurant management programs.

Recommendations for Further Study

1. Develop a comparable list of competencies and subcompetencies for foodservice programs leading to Bachelor's degree. A comprehensive list would then exist for foodservice programs from the secondary level up.

2. Survey post-secondary foodservice program graduates to determine their ratings of their ability to perform the competencies and subcompetencies. Compare these results to the instructor-determined list of competencies.

3. Survey employers of post-secondary foodservice program graduates to determine: (1) their opinion of which competencies are important and (2) their evaluation of graduates' abilities. Compare these opinions and evaluations to the instructor-determined competency list.

4. Conduct a study to compare the number of competencies and subcompetencies taught in the curricula of post-secondary schools and universities in the area of foodservice.

5. Replicate the study and compare the list of competencies and subcompetencies developed in the study with those listed by educators in similar programs in different regions of the United States.

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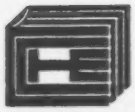
APPENDIX A

LETTER, DATA SHEET AND ROUND I QUESTIONNAIRE



HOME ECONOMICS CURRICULUM CENTER
Texas Tech University
P.O. Box 4067
Lubbock, Texas 79409-4067
(806) 742-3028

February 4, 1985

Name
Street
Address

Dear

Thank you for your willingness to participate in this study (sponsored by the Texas Education Agency) to improve the post-secondary programs in foodservice areas. The primary purpose of the study is to identify common essential competencies taught in post-secondary foodservice programs. The programs included in foodservice are:

Food Service Supervision	Nursing Home Food Service
Dietetic Technology	Restaurant Management
Culinary Arts	

The enclosed questionnaire is being sent to selected educators in the post-secondary foodservice areas. Through use of a DELPHI procedure, these educators will be encouraged to reach agreement regarding the importance of the competencies identified. For each subsequent round, the items for which agreement has been reached will be dropped from the questionnaire. Two or three rounds are usually required for concensus to be reached regarding most of the items. Your participation in each round of the procedure is extremely important to ensure valid results.

Please respond to each item on the enclosed questionnaire. Add comments as you feel the need. Return the questionnaire as directed.

Thank you very much for your assistance with this important project. The results will be used by post-secondary schools across the state in improving their food service programs.

Sincerely yours,

Linda R. Glosson
Project Director

Jay R. Schrock
Project Co-Director

Name _____ Institution _____ City _____

DATA SHEET

1. Which of the following best describes your highest level of formal education?

   _____ completed high school
   _____ some college
   _____ Bachelor degree
   _____ some graduate work
   _____ Master degree
   _____ Ph. D.

2. Please indicate any degrees you have received and the area of study. (ex: Bachelor of Science in Home Economics)

   _____
   _____
   _____

3. What were your major areas of study? (ex: computer science, marketing, education, etc.)

   _____
   _____

4. In what post-secondary food technology program(s) do you teach?

   _____ Continuing Education
   _____ Culinary Arts
   _____ Dietetic Technology
   _____ Nursing Home & Food
   _____ Service Supervision
   _____ Restaurant Managment

5. How many years of teaching experience do you have? _____ years.

6. How many years of foods service related job experience, other than teaching, do you have? _____ years.

7. Which of the following categories best describes your age?

   _____ 20-29 years
   _____ 30-39 years
   _____ 40-49 years
   _____ 50-59 years
   _____ over 60 years

8. Do you consult or work outside of education in the Hospitality Industry? _____ yes _____ no

9. Do you own a hospitality business? _____ yes _____ no

10. What percentage of your income does Question 8 and/or 9 account for? _____ %

POST-SECONDARY FOOD SERVICE COMPETENCY IDENTIFCATION

Listed below are competencies and subcompetencies that may be needed by students in all areas of food service by the time they complete their post-secondary food service educations. The food service areas are:

Food Service Supervision
Dietetic Technology
Culinary Arts
Nursing Home Food Service
Restaurant Managment

Which of these competencies do you feel are necessary for your graduates as they enter the work force (entry level)?

DIRECTIONS:

1. Please read each of the competencies and subcompetencies below.
2. Judge how important having each competency or subcompetency is to the success of a graduate entering the work force. If you feel that the competency is:
   a. not important, circle the rating of 1.
   b. slightly important, circle the rating of 2.
   c. moderately important, circle the rating of 3.
   d. important, circle the rating of 4.
   e. very important, circle the rating of 5.
3. If you have any comments regarding the wording or placement of individual competencies and subcompetencies, please make them in the space provided to the right of each.
4. If you would like to suggest additional subcompetencies, please do so in the space provided at the end of the appropriate competency. Rate any additional subcompetencies you list as you did those above.
5. If you would like to suggest additional competencies, please attach additional sheets at the end of the list. List each additional competency and any subcompetencies related to the competency. Indicate your rating of each additional competency and subcompetency as you did earlier.

RATINGS:

1 = Not important (NI)
2 = Slightly Important (SI)
3 = Moderately Important (MI)
4 = Important (I)
5 = Very Important (VI)

COMPETENCIES AND SUBCOMPETENCIES	NI	SI	MI	I	VI	COMMENTS
1.0 Provide information of target market food and nutrition needs.	1	2	3	4	5	
1.1 Collect data to make a market analysis of customer or patient needs.	1	2	3	4	5	
1.2 Suggest foodservice system to meet needs of target market(s).	1	2	3	4	5	
2.0 Advance practitioner competence.	1	2	3	4	5	
2.1 Make self-assessment of performance.	1	2	3	4	5	
2.1.1 Review evaluation of performance by superiors.	1	2	3	4	5	
2.1.2 Review strengths and weaknesses in own performance.	1	2	3	4	5	

COMPETENCIES AND SUBCOMPETENCIES	NI	SI	MI	I	VI	COMMENTS
2.2 Plan self-improvement program with help from superior.	1	2	3	4	5	
2.3 Implement a self-improvement program.	1	2	3	4	5	
2.4 Evaluate progress of the self-improvement program.	1	2	3	4	5	
3.0 Promote positive working relationships with other workers.	1	2	3	4	5	
3.1 Determine individuals whose work is similar.	1	2	3	4	5	
3.2 Establish communication channels and working relationships with individuals whose work is similar.	1	2	3	4	5	
3.3 Communicate operations-related information (e.g., policies, procedures, standards) to individuals whose work is similar.	1	2	3	4	5	
4.0 Utilize current foodservice systems information to interface areas of similarity.	1	2	3	4	5	
4.1 Review current information on foodservice systems to improve performance.	1	2	3	4	5	
4.2 Propose the application of current information on foodservice systems to improve performance.	1	2	3	4	5	
4.3 Collect data for foodservice systems applied research.	1	2	3	4	5	
5.0 Utilize menu as the focal point in the overall control processes for the foodservice system in area of responsibility.	1	2	3	4	5	
5.1 Recommend menu items based on market information, menu-planning principles, and resource straints (e.g., equipment, space, financial, personnel).	1	2	3	4	5	
5.2 Incorporate the menu into other activities of foodservice subsystems (e.g., procurement, production, distribution and service).	1	2	3	4	5	

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COMPETENCIES AND SUBCOMPETENCIES	NI	SI	MI	I	VI	COMMENTS
5.3 Collects data on nutrition adequacy, cost, system constraints, and client acceptance of the menu.	1	2	3	4	5	
6.0 Maintain foodservice subsystems, including procurement, food production, food distribution and service.	1	2	3	4	5	
6.1 Maintain procurement subsystem including purchasing receiving, storing, inventorying, and issuing of food and supplies as directed.	1	2	3	4	5	
6.1.1 Suggest objectives for procurement subsystem.	1	2	3	4	5	
6.1.2 Plan and implement activities for procurement subsystem.	1	2	3	4	5	
6.1.3 Supervise procurement subsystem operations.	1	2	3	4	5	
6.1.4 Monitor procurement subsystem operations for compliance with established criteria for cost, quality, quantity, safety, sanitation, and security of food and supplies.	1	2	3	4	5	
6.2 Maintain food production subsystem (including preparation and ingredient control) in compliance with federal, state, and local regulations.	1	2	3	4	5	
6.2.1 Suggest objectives for food production subsystem.	1	2	3	4	5	
6.2.2 Plan and implement activities for food production subsystem based on objectives and established standards.	1	2	3	4	5	
6.2.3 Supervise food production subsystem operations.	1	2	3	4	5	
6.2.4 Examine food products for compliance with established standards for cost, quality, safety, and sanitation.	1	2	3	4	5	

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COMPETENCIES AND SUBCOMPETENCIES	NI	SI	MI	I	VI	COMMENTS
6.2.5 Implement changes in food products as directed.	1	2	3	4	5	
6.2.6 Monitor food production subsystem for compliance with established criteria cost, quality, quantity, safety, sanitation, and security.	1	2	3	4	5	
6.3 Maintain food distribution and service to insure compliance with federal, state, and local regulations.	1	2	3	4	5	
6.3.1 Suggest objectives for food distribution and service.	1	2	3	4	5	
6.3.2 Plan and implement activities for food distribution and service subsystem based on objectives and established standards.	1	2	3	4	5	
6.3.3 Supervise food distribution and service subsystem operations.	1	2	3	4	5	
6.3.4 Collect data on client's acceptance of food products based on cost, quality, nutrition and sensory perceptions.	1	2	3	4	5	
7.0 Supervise utilization of foodservice system resources, including human, material, physical, and operational resources.	1	2	3	4	5	
7.1 Manage human resources for area of responsibility.	1	2	3	4	5	
7.1.1 Suggest objectives for utilization of human resources.	1	2	3	4	5	
7.1.2 Provide information for organizing functional work units.	1	2	3	4	5	
7.1.2.1 Specify and sequence tasks to be completed by workforce.	1	2	3	4	5	
7.1.2.2 Write job descriptions for review based on established format.	1	2	3	4	5	

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COMPETENCIES AND SUBCOMPETENCIES	NI	SI	MI	I	VI	COMMENTS
7.1.3 Follow procedures for utilization of human resources in compliance with personnel regulations and union contracts.	1	2	3	4	5	
7.1.4 Monitor control mechanisms (e.g., performance standards, productivity indices, work schedules for managment of human resources.	1	2	3	4	5	
7.1.5 Interview applicants for identified positions.	1	2	3	4	5	
7.1.6 Recommend applicants for selection.	1	2	3	4	5	
7.1.8 Train personnel and enforce policies of personal hygiene, safety, and sanitation.	1	2	3	4	5	
7.1.9 Prepare work schedules and job assignments.	1	2	3	4	5	
7.1.9.1 Review performance standards with designated subordinates.	1	2	3	4	5	
7.1.9.2 Monitor performance of designated subordinates.	1	2	3	4	5	
7.1.9.3 Counsel designated subordinates.	1	2	3	4	5	
7.1.10 Document and maintains personnel information for designated subordinates.	1	2	3	4	5	
7.1.11 Evaluate performance of designated subordinates based on established standards.	1	2	3	4	5	
7.1.12 Suggest job-related training for designated subordinates.	1	2	3	4	5	
7.1.13 Conduct assigned job-related training for designated subordinates.	1	2	3	4	5	

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COMPETENCIES AND SUBCOMPETENCIES	NI	SI	MI	I	VI	COMMENTS
7.1.14 Evaluate effectiveness of assigned job-related training for designated subordinates.	1	2	3	4	5	
7.1.15 Change assigned job-related training for designated subordinates based on evaluation.	1	2	3	4	5	
7.2 Maintain foodservice facility and equipment in compliance with federal, state, and local regulations.	1	2	3	4	5	
7.2.1 Suggest obectives for maintenance offoodservice facility and equpment.	1	2	3	4	5	
7.2.2 Implementprocedures for maintenanne of foodservice facility anc equipment.	1	2	3	4	5	
7.2.3 Inspect foxdservice facility and equipnent for safety, sanitation,security and maintenance.	1	2	3	4	5	
7.2.4 Schedule ceaning and preventive maintnance of foodservice facilit; and equipment.	1	2	3	4	5	
7.2.5 Communiate maintenance requirement:of foodservice facility and equpment to others within theorganization.	1	2	3	4	5	
7.2.6 Supervise anitation of foodservice facity and equipment.	1	2	3	4	5	
7.2.7 Monitor mintenance of foodservice facity and equipment for complince with established criteria or safety, sanitation, and scurity.	1	2	3	4	5	
7.2.8 Implemenchanges in maintenance ofoodservice facility and equpment as directed.	1	2	3	4	5	
7.2.9 Suggest an evaluate layout and designmprovements for foodservic facility equipment, and ecor.	1	2	3	4	5	

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COMPETENCIES AND SUBCOMPETENCIES	NI	SI	MI	I	VI	COMMENTS
7.3 Maintain information resources for area of responsibility.	1	2	3	4	5	
7.3.1 Monitor procedures for collecting, storing, securing, retrieving, reporting, and using information for area of responsibility.	1	2	3	4	5	
7.3.2 Implement procedures for collecting, storing, securing, retrieving, reporting, and using information for area of responsibility.	1	2	3	4	5	
7.3.3 Utilize data (e.g., financial, operational, human resource) to maintain foodservice system in area of responsibility.	1	2	3	4	5	
7.4 Manage components of operating budget.	1	2	3	4	5	
7.4.1 Collect information for budget planning following established procedures.	1	2	3	4	5	
7.4.1.1 Summarize units of service (e.g., meals, meal equivalents, customer count, sales) as basis for operating budget.	1	2	3	4	5	
7.4.1.2 Collect data on operational costs (e.g., cost of labor food, supplies.	1	2	3	4	5	
7.4.1.3 Suggest capital expenditures.	1	2	3	4	5	
7.4.2 Price menu items in accordance with established procedures.	1	2	3	4	5	
7.4.3 Implement established procedures for billing, cash handling, and handling of non-cash receipt income.	1	2	3	4	5	
7.4.4 Use financial resources in accordance with approved budget for rea of responsibility.	1	2	3	4	5	

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COMPETENCIES AND SUBCOMPETENCIES		NI	SI	MI	I	VI	COMMENTS
7.4.5	Suggest corrective actions for bringing costs in line with budgetary allocations.	1	2	3	4	5	
8.0	Follow Quality Assurance (QA) Program procedures for area of responsibility.	1	2	3	4	5	
8.1	Collect and document Quality Assurance (QA) Program data for area of responsibility.	1	2	3	4	5	
8.2	Interpret Quality Assurance (QA) data for area of responsibility based on established criteria.	1	2	3	4	5	
8.3	Propose for review corrective action for area of responsibility in accordance with Quality Assurance (QA) Program.	1	2	3	4	5	
8.4	Implement approved plan for corrective action for area of responsibility based on Quality Assurance (QA) Program.	1	2	3	4	5	
9.0	Manage business responsibilities related to food production and service.	1	2	3	4	5	
9.1	Describe personal qualities which lead to job success in food management, production, and services.	1	2	3	4	5	
9.2	Develop, evaluate and implement organizational goals policies, and procedures in the operation of food service.	1	2	3	4	5	
9.3	Supervise equipment selection, purchase, use, and care.	1	2	3	4	5	
9.4	Maintain safe working conditions.	1	2	3	4	5	
9.5	Identify procedures used to plan, interview, hire, evaluate, and discharge staff.	1	2	3	4	5	
9.6	Relieve or assist other employees during emergencies or rush periods.	1	2	3	4	5	
9.7	Plan menus appropriate for type of food service.	1	2	3	4	5	

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COMPETENCIES AND SUBCOMPETENCIES	NI	SI	MI	I	VI	COMMENTS
9.8 Select, develop, and standardize recipes.	1	2	3	4	5	
9.9 Cost menu items, set menu prices of foods, and make changes in menu when needed.	1	2	3	4	5	
9.10 Arrange, design, and interpret menu sheets or folders.	1	2	3	4	5	
9.11 Contact purveyors, and compare food prices.	1	2	3	4	5	
9.12 Prepare market orders, and purchase food and consumable supplies.	1	2	3	4	5	
9.13 Evaluate use, cost, ease of preparation, and aesthetic qualities of foods.	1	2	3	4	5	
9.14 Direct stockroom activities.	1	2	3	4	5	
9.15 Take inventories of food, utensils, and equipment.	1	2	3	4	5	
9.16 Plan, coordinate, and supervise production.	1	2	3	4	5	
9.17 Set production standards.	1	2	3	4	5	
9.18 Control and improve sequence of operations.	1	2	3	4	5	
9.19 Schedule food preparation tasks.	1	2	3	4	5	
9.20 Utilize food, labor, and equipment cost-control procedures.	1	2	3	4	5	
9.21 Handle complaints and human relations problems.	1	2	3	4	5	
9.22 Apply merchandising techniques to ensure profit.	1	2	3	4	5	
9.23 Plan and conduct advertising and promotional programs.	1	2	3	4	5	
9.24 Prepare and maintain records, correspondence, and forms.	1	2	3	4	5	

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COMPETENCIES AND SUBCOMPETENCIES	NI	SI	MI	I	VI	COMMENTS
9.25 Plan and analyze finances, costs, and sales.	1	2	3	4	5	
9.26 Interpret and comply with laws and statutes pertaining to food service establishments.	1	2	3	4	5	
10.0 Utilize appropriate safety practices and emergency procedures.	1	2	3	4	5	
10.1 Keep food service facility free of hazardous conditions and unsafe equipment and materials.	1	2	3	4	5	
10.2 Maintain high safety standards in food service preparation, service, and cleanup tasks.	1	2	3	4	5	
10.3 Follow appropriate procedures in emergency situations.	1	2	3	4	5	
10.4 Complete accident reports and records.	1	2	3	4	5	
11.0 Maintain appropriate standards of sanitation.	1	2	3	4	5	
11.1 Follow federal, state, and local sanitation codes for food service establishments.	1	2	3	4	5	
11.2 Maintain acceptable standards in personal grooming and hygiene.	1	2	3	4	5	
11.3 Perform sanitation duties according to the cleaning schedule provided.	1	2	3	4	5	
11.4 Use sanitary food handling, preparation, and storage techniques.	1	2	3	4	5	
11.5 Report signs of pests in the food service establishment.	1	2	3	4	5	
11.6 Use sanitary procedures when washing, sanitizing, and other utensils by hand.	1	2	3	4	5	
11.7 Use sanitary procedures when washing glassware, tableware and flatware in the dishwashing machine.	1	2	3	4	5	

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COMPETENCIES AND SUBCOMPETENCIES	NI	SI	MI	I	VI	COMMENTS
11.8 Inspect, sort, and store clean glassware, tableware, flatware, and utensils.	1	2	3	4	5	
12.0 Use nutritional information in planning, preparing, and serving food.	1	2	3	4	5	
12.1 Display awareness of various factors which affect eating habits.	1	2	3	4	5	
12.2 Use nutritional information in meeting dietary needs of persons of various ages.	1	2	3	4	5	
12.3 Use food preparation techniques which conserve nutrients.	1	2	3	4	5	
12.4 Define and use correct diet terminology.	1	2	3	4	5	
12.5 Identify menus for general and modified diets.	1	2	3	4	5	
12.6 Adapt means for modified diets.	1	2	3	4	5	
12.7 Follow diet instructions in preparing general and modified diets and diet supplments, and in assembling trays.	1	2	3	4	5	
12.8 Report patient and customer food response to supervisor.	1	2	3	4	5	
13.0 Select, use and care for food service equipment.	1	2	3	4	5	
13.1 Identify, select, and use large and small food service equipment.	1	2	3	4	5	
13.2 Clean, maintain, and store food service equipment and tools.	1	2	3	4	5	
13.3 Report equipment needing repairs to supervisor.	1	2	3	4	5	
14.0 Receive, store, and issue food and supplies.	1	2	3	4	5	
14.1 Receive and inspect food and supplies.	1	2	3	4	5	

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COMPETENCIES AND SUBCOMPETENCIES	NI	SI	MI	I	VI	COMMENTS
14.2 Complete receiving records.	1	2	3	4	5	
14.3 Prepare food and supplies for storage, and then store.	1	2	3	4	5	
14.4 Maintain storage facilites at optimum conditions for food preservation.	1	2	3	4	5	
14.5 Issue and rotate food and supplies.	1	2	3	4	5	
15.0 Use appropriate food production techniques.	1	2	3	4	5	
15.1 Adjust standard recipes to serve more or fewer persons than specified.	1	2	3	4	5	
15.2 Read and follow recipe instructions.	1	2	3	4	5	
15.3 Use food preparation and service terms correctly.	1	2	3	4	5	
15.4 Identify a variety of foods; their types, forms, and properties.	1	2	3	4	5	
15.5 Set up and maintain individual work area utilizing time- and energy-saving techniques.	1	2	3	4	5	
15.6 Assemble and prepare ingredients (or suitable substitutes) and equipment.	1	2	3	4	5	
15.7 Measure and weigh foods according to specifications in standard recipes.	1	2	3	4	5	
15.8 Use a variety of cooking techniques.	1	2	3	4	5	
15.9 Utilize convenience foods in food preparation.	1	2	3	4	5	
15.10 Use correct time and temperatures for energy-efficient food preparation.	1	2	3	4	5	
15.11 Identify, use, and store spices herbs, and extracts properly.	1	2	3	4	5	
15.12 Prepare a variety of nonalcoholic beverages.	1	2	3	4	5	

COMPETENCIES AND SUBCOMPETENCIES	NI	SI	MI	I	VI	COMMENTS
15.13 Prepare appetizers and garnishes.	1	2	3	4	5	
15.14 Prepare hot and cold sandwiches.	1	2	3	4	5	
15.15 Prepare salads and salad dressings.	1	2	3	4	5	
15.16 Prepare fruits and vegetables.	1	2	3	4	5	
15.17 Prepare soups, sauces, and gravies.	1	2	3	4	5	
15.18 Prepare cereal and pasta products.	1	2	3	4	5	
15.19 Prepare eggs and egg dishes.	1	2	3	4	5	
15.20 Prepare cheeses and cheese dishes.	1	2	3	4	5	
15.21 Prepare meats, seafoods, and poultry.	1	2	3	4	5	
15.22 Prepare puddings, custards, souffles, gelatin desserts, and frozen desserts.	1	2	3	4	5	
15.23 Prepare fruit desserts and fried desserts.	1	2	3	4	5	
15.24 Prepare breads.	1	2	3	4	5	
15.25 Make cookies, cakes, pies, pastries, and meringues.	1	2	3	4	5	
15.26 Prepare and use icings, frostings, and fillings.	1	2	3	4	5	
15.27 Prepare specialty foods (international cuisine, ethnic cuisine, gourmet foods).	1	2	3	4	5	
15.28 Exercise showmanship in specialized food preparation in dining area or at customer's table.	1	2	3	4	5	
15.29 Plate and garnish foods attractively.	1	2	3	4	5	
15.30 Prepare artistic food displays for serving lines, buffets, soup and salad bars, and special events.	1	2	3	4	5	

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COMPETENCIES AND SUBCOMPETENCIES		NI	SI	MI	I	VI	COMMENTS
15.31	Observe, test, and evaluate quality of foods being prepared using sanitary procedures.	1	2	3	4	5	
15.32	Portion foods accurately during food preparation and service using specified portioning tools.	1	2	3	4	5	
15.33	Hold or store prepare foods until needed.	1	2	3	4	5	
15.34	Plan work schedule so foods are ready at serving time.	1	2	3	4	5	
15.35	Coordinate and assemble food orders.	1	2	3	4	5	
16.0	Utilize appropriate customer service procedures.	1	2	3	4	5	
16.1	Perform opening, closing, and sidework duties.	1	2	3	4	5	
16.2	Set up a banquet or meeting room according to written orders.	1	2	3	4	5	
16.3	Take dining reservations and determine seating needs, using space and personnel effectively.	1	2	3	4	5	
16.4	Welcome guests and oversee customer comfort.	1	2	3	4	5	
16.5	Present menus, answer questions, encourage purchase of additional menu items, and take food orders following prescribed methods.	1	2	3	4	5	
16.6	Relay orders to kitchen or serving counter.	1	2	3	4	5	
16.7	Pick up orders in kitchen, and verify by scanning filled plates and trays.	1	2	3	4	5	
16.8	Package take-out orders, and serve take-out customers.	1	2	3	4	5	
16.9	Transfer food and dishes between floors of an establishment using a dumbwaiter.	1	2	3	4	5	

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COMPETENCIES AND SUBCOMPETENCIES	NI	SI	MI	I	VI	COMMENTS
16.10 Serve food and beverages in prescribed manner.	1	2	3	4	5	
16.11 Provide appropriate accompaniments with each course.	1	2	3	4	5	
16.12 Serve foods at customer's table a seated banquet, or special occasion.	1	2	3	4	5	
16.13 Serve food and beverages to guests or patients in their rooms.	1	2	3	4	5	
16.14 Check guests' or patients' needs and supply needed items.	1	2	3	4	5	
16.15 Handle and report complaints as directed.	1	2	3	4	5	
16.16 Clear items from table, and remove soiled items from table and stations.	1	2	3	4	5	
16.17 Carry loaded trays between kitchen and serving areas.	1	2	3	4	5	
16.18 Sort, count, and store utensils at designated places.	1	2	3	4	5	
16.19 Itemized and total price of each order.	1	2	3	4	5	
16.20 Present check to customer, and accept a payment or refer customer to a cashier.	1	2	3	4	5	
16.21 Prepare cash drawers.	1	2	3	4	5	
16.22 Handle payments (cash, checks, credit cards), operating cash register, making change, and writing receipts.	1	2	3	4	5	
16.23 Display, sell, order, and restock counter items.	1	2	3	4	5	
16.24 Prove cash, and prepare deposits.	1	2	3	4	5	
16.25 Give tips to proper waiter/waitress.	1	2	3	4	5	

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COMPETENCIES AND SUBCOMPETENCIES	NI	SI	MI	I	VI	COMMENTS
17.0 Transport food, beverages, and equipment to and from serving location.	1	2	3	4	5	
17.1 Pack and transport food, beverages, utensils, and equipment.	1	2	3	4	5	
17.2 Maintain quality of transported food.	1	2	3	4	5	
17.3 Set up rooms for catered parties.	1	2	3	4	5	
17.4 Unload and deliver food and beverages.	1	2	3	4	5	
17.5 Pick up food carts, and empty trays from patients, guests, or customers.	1	2	3	4	5	
17.6 Pick up and return trays, dishes, utensils, and equipment to dishwashing area.	1	2	3	4	5	
18.0 Utilize computer systems to meet management control objectives	1	2	3	4	5	
18.1 Collect data on computer systems presently available for food service operations	1	2	3	4	5	
18.2 Recommend computer systems to be used in food service operations	1	2	3	4	5	
18.3 Collect forecast data using a computer system	1	2	3	4	5	
18.4 Have an understanding of computer hardware and software	1	2	3	4	5	

APPENDIX B

ROUND II QUESTIONNAIRE

POST-SECONDARY FOOD SERVICE COMPETENCY IDENTIFCATION

Listed below are competencies and subcompetencies that may be needed by students in all areas of food service by the time they complete their post-secondary food service educations. The food service areas are:

Food Service Supervision
Dietetic Technology
Culinary Arts
Nursing Home Food Service
Restaurant Managment

Which of these competencies do you feel are necessary for YOUR GRADUATES as they ENTER the work force (entry level)?

DIRECTIONS:

1. Please read each of the competencies and subcompetencies below. **NOTE** the average or mean rating given to each item in Questionnaire I is shown by an asterisk (*).
2. Judge how important having each competency or subcompetency is to the success of a graduate entering the work force. If you feel that the competency is:
   a. not important, circle the rating of 1.
   b. slightly important, circle the rating of 2.
   c. moderately important, circle the rating of 3.
   d. important, circle the rating of 4.
   e. very important, circle the rating of 5.
3. If you have any comments regarding the wording or placement of individual competencies and subcompetencies, please make them in the space provided to the right of each.

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COMPETENCIES AND SUBCOMPETENCIES		NI	SI	MI	I	VI	COMMENTS
1.0	Provide information of target-market food and nutrition needs.	AGREEMENT REACHED					
1.1	Collect data to make a market analysis of customer or patient needs.	1	2	3	* 4	5	
1.2	Suggest foodservice system to meet needs of target market(s).	1	2	3	* 4	5	
2.0	Advance practitioner competence.	1	2	3	* 4	5	
3.0	Promote positive working relationships with other workers.	AGREEMENT REACHED					
4.0	Utilize current foodservice systems information to interface areas of similarity.	AGREEMENT REACHED					
4.1	Review current information on foodservice system to improve performance.	1	2	3	* 4	5	

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COMPETENCIES AND SUBCOMPETENCIES	NI	SI	MI	I	VI	COMMENTS
4.3 Collect data for foodservice systems applied research.	1	2	• 3	4	5	
5.0 Utilize menu as the focal point in the overall control processes for the foodservice system in area of responsibility.	AGREEMENT REACHED					
6.0 Maintain foodservice subsystems, including procurement, food production, food distribution and service.	AGREEMENT REACHED					
6.1.1 Suggest objectives for procurement subsystem.	1	2	3	• 4	5	
6.1.2 Plan and implement activities for procurement subsystem.	1	2	3	• 4	5	
6.1.3 Supervise procurement subsystem operations.	1	2	3	• 4	5	
6.3.2 Plan and implement activities for food distribution and service subsystem based on objectives and established standards.	1	2	3	• 4	5	
7.0 Supervise utilization of foodservice system resources, including human, material, physical, and operational resources.	AGREEMENT REACHED					
7.1.3 Follow procedures for utilization of human resources in compliance with personnel regulations and union contracts.	1	2	3	• 4	5	
7.1.5 Interview applicants for identified positions.	1	2	3	• 4	5	
7.1.6 Recommend applicants for selection.	1	2	3	• 4	5	
7.1.15 Change assigned job-related training for designated subordinates based on evaluation.	1	2	3	• 4	5	
7.2.9 Suggest and evaluate layout and design improvements for foodservice facility equipment, and decor.	1	2	3	• 4	5	

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COMPETENCIES AND SUBCOMPETENCIES	NI	SI	MI	I	VI	COMMENTS
7.3.1 Monitor procedures for collecting, storing, securing, retrieving, reporting, and using information for area of responsibility.	1	2	3	• 4	5	
8.0 Follow Quality Assurance (QA) Program procedures for area of responsibility.	AGREEMENT REACHED					
8.3 Propose for review corrective action for area of responsibility in accordance with Quality Assurance (QA) Program.	1	2	3	• 4	5	
9.0 Manage business responsibilities related to food production and service.	AGREEMENT REACHED					
9.14 Direct stockroom activites.	1	2	3	• 4	5	
9.23 Plan and conduct advertising and promotional programs.	1	2	3	• 4	5	
10.0 Utilize appropriate safety practices and emergency procedures.	AGREEMENT REACHED					
11.0 Maintain appropriate standards of sanitation.	AGREEMENT REACHED					
12.0 Use nutritional information in planning, preparing, and serving food.	AGREEMENT REACHED					
13.0 Select, use and care for food service equipment.	AGREEMENT REACHED					
14.0 Receive, store, and issue food and supplies.	AGREEMENT REACHED					
15.0 Use appropriate food production techniques.	AGREEMENT REACHED					
15.9 Utilize convenesience foods in food preparation.	1	2	3	• 4	5	
15.12 Prepare a variety of nonalcoholic beverages.	1	2	• 3	4	5	
15.13 Prepare appetizers and garnishes.	1	2	• 3	4	5	
15.14 Prepare hot and cold sandwiches.	1	2	• 3	4	5	

COMPETENCIES AND SUBCOMPETENCIES	NI	SI	MI	I	VI	COMMENTS
15.15 Prepare salads and salad dressings.	1	2	3	• 4	5	
15.17 Prepare soups, sauces, and gravies.	1	2	3	• 4	5	
15.18 Prepare cereal and pasta products.	1	2	3	• 4	5	
15.20 Prepare cheeses and cheese dishes.	1	2	3	• 4	5	
15.22 Prepare puddings, custards, souffles, gelatin desserts, and frozen desserts.	1	2	3	• 4	5	
15.23 Prepare fruit desserts and fried desserts.	1	2	3	• 4	5	
15.24 Prepare breads.	1	2	3	• 4	5	
15.25 Make cookies, cakes, pies, pastries, and meringues.	1	2	3	• 4	5	
15.26 Prepare and use icings, frostings, and fillings.	1	2	3	• 4	5	
15.27 Prepare specialty foods (international cuisine, ethnic cuisine, gourmet foods).	1	2	3	• 4	5	
15.28 Exercise showmanship in specialized food preparation in dining area or at customer's table.	1	2	3	• 4	5	
15.30 Prepare artistic food displays for serving lines, buffets, soup and salad bars, and special events.	1	2	3	• 4	5	
16.0 Utilize appropriate customer service procedures.	AGREEMENT REACHED					
16.3 Take dining reservations and determine seating needs, using space and personnel effectively.	1	2	3	• 4	5	
16.7 Pick up orders in kitchen, and verify by scanning filled plates and trays.	1	2	3	• 4	5	
16.8 Package take-out orders, and serve take-out customers.	1	2	• 3	4	5	

COMPETENCIES AND SUBCOMPETENCIES	NI	SI	MI	I	VI	COMMENTS
16.9 Transfer food and dishes between floors of an establishment using a dumbwaiter.	1	2	• 3	4	5	
16.11 Provide appropriate accompaniments with each course.	1	2	3 •	4	5	
16.12 Serve foods at customer's table a seated banquet, or special occasion.	1	2	3 •	4	5	
16.13 Serve food and beverages to guests or patients in their rooms.	1	2	• 3	4	5	
16.14 Check guests' or patients' needs and supply needed items.	1	2	3 •	4	5	
16.16 Clear items from table, and remove soiled items from table and stations.	1	2	• 3	4	5	
16.17 Carry loaded trays between kitchen and serving areas.	1	2	• 3	4	5	
16.18 Sort, count and store utensils at designated places.	1	2	• 3	4	5	
16.19 Itemize and total price of each order.	1	2	3	• 4	5	
16.20 Present check to customer, and accept a payment or refer customer to a cashier.	1	2	• 3	4	5	
16.23 Display, sell, order, and restock counter items.	1	2	• 3	4	5	
16.25 Give tips to proper waiter/waitress.	1	2	3 •	4	5	
17.0 Transport food, beverages, and equipment to and from serving location.	1	2	• 3	4	5	
17.1 Pack and transport food, beverages, utensils, and equipment.	1	2	• 3	4	5	
17.3 Set up rooms for catered parties.	1	2	3 •	4	5	

COMPETENCIES AND SUBCOMPETENCIES	NI	SI	MI	I	VI	COMMENTS
17.4 Unload and deliver food and beverages.	1	2	• 3	4	5	
17.5 Pick up food carts, and empty trays from patients, guests, or customers.	1	2	• 3	4	5	
17.6 Pick up and return trays, dishes, utensils, and equipment to dishwashing area.	1	2	• 3	4	5	
18.0 Utilize computer systems to meet management control objectives.	AGREEMENT REACHED					
18.2 Recommend computer systems to be used in food service operations.	1	2	3	• 4	5	
18.3 Collect forecast data using a computer system	1	2	3	• 4	5	

APPENDIX C

MEANS PERCENTAGES FOR ALL COMPETENCIES AND SUBCOMPETENCIES

MEANS PERCENTAGES FOR ALL COMPETENCIES AND SUBCOMPETENCIES

	Round I		Round II		
Item	mean	%	mean	%	significance
1.0	3.94	71.4			.05
1.1	3.66	65.7	3.66	85.7	.001
1.2	3.8	68.6	3.60	80	.001
2.0	4.03	72.4			.05
2.1	4.03	82.8			.001
2.1.1	4.11	80			.001
2.1.2	4.49	91.4			.001
2.2	4.2	85.7			.001
2.3	4.26	82.8			.001
2.4	4.26	85.6			.001
3.0	4.79	97.1			.001
3.1	3.66	71.4			.05
3.2	4.34	91.4			.001
3.3	4.14	88.6			.001
4.0	3.72	84.8			.001
4.1	3.80	68.6	3.83	74.3	.01
4.2	3.46	77.1			.01
4.3	3.06	68.6	2.91	71.4	.05
5.0	4.44	79.4			.01
5.1	4.40	80			.001
5.2	4.34	82.8			.001
5.3	4.29	82.7			.001
6.0	4.11	71.4			.05
6.1	4.06	80			.001
6.1.1	3.74	62.9	3.54	82.9	.001
6.1.2	3.66	68.6	3.63	88.6	.001
6.1.3	3.83	68.6	3.69	82.9	.001
6.1.4	4.14	82.9			.001
6.2	4.26	82.4			.001
6.2.1	3.80	77.1			.01
6.2.2	3.89	74.3			.01
6.2.3	4.20	80			.001
6.2.4	4.46	88.6			.001
6.2.5	4.09	82.9			.001
6.2.6	4.23	80			.001

Item	Round I mean	%	Round II mean	%	significance
6.3	4.34	80			.001
6.3.1	3.97	74.3			.01
6.3.2	3.83	65.7	3.74	88.6	.001
6.3.3	4.14	77.1			.01
6.3.4	4.34	82.9			.001
7.0	4.25	81.3			.01
7.1	4.35	82.4			.001
7.1.1	4.14	82.9			.001
7.1.2	4.11	77.1			.01
7.1.2.1	3.97	77.1			.01
7.1.2.2	3.94	71.4			.05
7.1.3	3.77	65.7	3.83	71.4	.05
7.1.4	3.83	71.4			.05
7.1.5	3.74	57.1	3.80	68.6	.05
7.1.6	3.86	65.7	3.89	77.1	.001
7.1.8	4.51	88.6			.001
7.1.9	4.11	74.3			.01
7.1.9.1	4.11	82.9			.001
7.1.9.2	4.23	85.7			.001
7.1.9.3	4.11	80			.001
7.1.10	4.06	77.1			.01
7.1.11	3.97	80			.001
7.1.12	4.11	80			.001
7.1.13	3.91	74.3			.01
7.1.14	3.91	74.3			.01
7.1.15	3.94	68.6	3.74	74.3	.01
7.2	4.46	85.7			.001
7.2.1	3.86	71.4			.05
7.2.2	4.09	82.9			.001
7.2.3	4.49	88.6			.001
7.2.4	4.40	88.6			.001
7.2.5	4.37	91.4			.001
7.2.6	4.40	91.4			.001
7.2.7	4.17	85.7			.001
7.2.8	4.06	72.1			.01
7.2.9	3.80	65.7	3.77	77.1	.001
7.3	4.11	77.1			.01
7.3.1	4.03	65.7	4.09	82.9	.001
7.3.2	4.11	71.4			.01
7.3.3	4.23	80			.001

Item	Round I mean	%	Round II mean	%	significance
7.4	4.00	80			.001
7.4.1	4.03	82.9			.001
7.4.1.1	4.11	82.9			.001
7.4.1.2	4.03	80			.001
7.4.1.3	3.86	71.4			.05
7.4.2	4.06	77.1			.01
7.4.3	4.00	77.1			.01
7.4.4	4.09	82.9			.001
7.4.5	4.17	80			.001
8.0	4.24	84.8			.001
8.1	4.09	77.1			.01
8.2	4.03	74.3			.01
8.3	3.83	68.6	3.86	77.1	.001
8.4	4.03	71.4			.05
9.0	4.18	79.4			.01
9.1	4.14	82.9			.001
9.2	3.89	77.1			.01
9.3	3.97	80			.001
9.4	4.66	91.4			.001
9.5	3.86	77.1			.01
9.6	4.14	82.9			.001
9.7	4.37	88.6			.001
9.8	4.23	82.9			.001
9.9	4.20	85.7			.001
9.10	3.80	71.4			.05
9.11	4.17	80			.001
9.12	4.09	88.6			.001
9.13	4.31	85.7			.001
9.14	3.71	65.7	3.89	77.1	.001
9.15	4.17	80			.001
9.16	4.14	82.9			.001
9.17	4.17	80			.001
9.18	4.11	80			.001
9.19	4.09	80			.001
9.20	4.37	88.6			.001
9.21	4.54	88.6			.001
9.22	4.20	85.7			.001
9.23	3.77	62.9	3.37	88.6	.001
9.24	3.97	80			.001
9.25	4.17	85.7			.001
9.26	4.43	82.9			.001

Item	Round I mean	%	Round II mean	%	significance
10.0	4.68	97.1			.001
10.1	4.54	88.6			.001
10.2	4.57	88.6			.001
10.3	4.71	94.3			.001
10.4	4.60	94.3			.001
11.0	4.69	91.4			.001
11.1	4.74	91.4			.001
11.2	4.77	100			.001
11.3	4.49	88.6			.001
11.4	4.63	91.4			.001
11.5	4.60	97.1			.001
11.6	4.60	91.4			.001
11.7	4.60	91.4			.001
11.8	4.11	71.4			.05
12.0	4.56	97.1			.001
12.1	4.20	85.7			.001
12.2	4.37	91.4			.001
12.3	4.43	85.7			.001
12.4	4.23	88.6			.001
12.5	4.24	85.3			.001
12.6	4.09	71.4			.05
12.7	4.24	80			.001
12.8	4.37	91.4			.001
13.0	4.09	85.3			.001
13.1	3.91	77.1			.01
13.2	4.14	82.9			.001
13.3	4.43	91.4			.001
14.0	4.09	82.4			.001
14.1	4.17	82.9			.001
14.2	4.26	88.6			.001
14.3	4.09	80			.001
14.4	4.31	85.7			.001
14.5	4.23	82.9			.001
15.0	4.31	82.9			.001
15.1	4.46	91.4			.001
15.2	4.31	88.6			.001
15.3	4.34	88.6			.001
15.4	4.14	77.1			.01
15.5	4.17	85.7			.001
15.6	4.12	82.4			.001

Item	Round I mean	Round I %	Round II mean	Round II %	significance
15.7	4.35	85.3			.001
15.8	4.17	82.9			.001
15.9	3.83	65.7	3.71	71.4	.05
15.10	4.29	85.7			.001
15.11	4.03	77.1			.01
15.12	3.40	60	3.31	74.3	.01
15.13	3.43	60	3.40	82.9	.001
15.14	3.57	68.6			.05
15.15	3.63	65.7		79.4	.001
15.16	3.69	71.4			.05
15.17	3.66	65.7	3.57	77.1	.001
15.18	3.66	68.6	3.46	80	.001
15.19	3.71	71.4			.05
15.20	3.74	68.6	3.49	80	.001
15.21	3.80	74.3			.01
15.22	3.63	68.6	3.46	80	.001
15.23	3.65	64.7	3.51	82.9	.001
15.24	3.63	68.6	3.37	77.1	.001
15.25	3.54	60	3.46	74.3	.01
15.26	3.43	62.9	3.31	77.1	.001
15.27	3.34	65.7	3.11	74.3	.01
15.28	3.49	60	3.37	77.1	.001
15.29	4.03	77.1			.01
15.30	3.66	60	3.60	74.3	.01
15.31	4.37	88.6			.001
15.32	4.37	85.7			.001
15.33	4.29	85.7			.001
15.34	4.37	88.6			.001
15.35	4.17	82.9			.001
16.0	4.06	77.1			.01
16.1	3.80	74.3			.01
16.2	3.74	71.4			.05
16.3	3.57	60	3.31	65.7	n.s.
16.4	4.11	80			.001
16.5	3.91	74.3			.01
16.6	3.74	71.4			.05
16.7	3.54	68.6	3.57	74.3	.01
16.8	3.14	51.4	2.89	65.7	n.s.
16.9	2.83	51.4	2.26	60	n.s.
16.10	3.94	74.3			.01

Item	Round I mean	Round I %	Round II mean	Round II %	significance
16.11	3.66	65.7		73.5	.01
16.12	3.49	54.3	3.31	62.9	n.s.
16.13	3.11	60	3.09	71.4	.05
16.14	3.51	62.9	3.6	80	.001
16.15	4.31	85.7			.001
16.16	3.26	54.3	3.2	62.9	n.s.
16.17	3.03	54.3	2.97	71.4	.05
16.18	3.09	54.3	2.91	60	n.s.
16.19	3.65	64.7	3.49	65.7	n.s.
16.20	3.29	51.4	3.17	57.1	n.s.
16.21	3.89	74.3			.01
16.22	3.94	74.3			.01
16.23	3.37	60	3.14	65.7	n.s.
16.24	3.97	74.3			.01
16.25	3.35	52.9	3.09	57.1	n.s.
17.0	3.31	60	3.11	71.4	.05
17.1	3.20	60	3.00	68.6	.05
17.2	3.83	71.4			.05
17.3	3.34	63.9	3.37	77.1	.001
17.4	3.06	51.4	2.80	62.9	n.s.
17.5	2.91	54.3	2.83	62.9	n.s.
17.6	2.97	54.3	2.80	60	n.s.
18.0	4.15	73.5			.01
18.1	4.03	73.5			.01
18.2	3.82	67.6	3.57	77.1	.001
18.3	3.85	67.6	3.77	77.1	.001
18.4	4.35	85.3			.001

Seventy percent consensus within two adjacent categories was used as the level required for elimination of item from Round I.

Complete competency and subcompetency statements can be found in Appendix A.